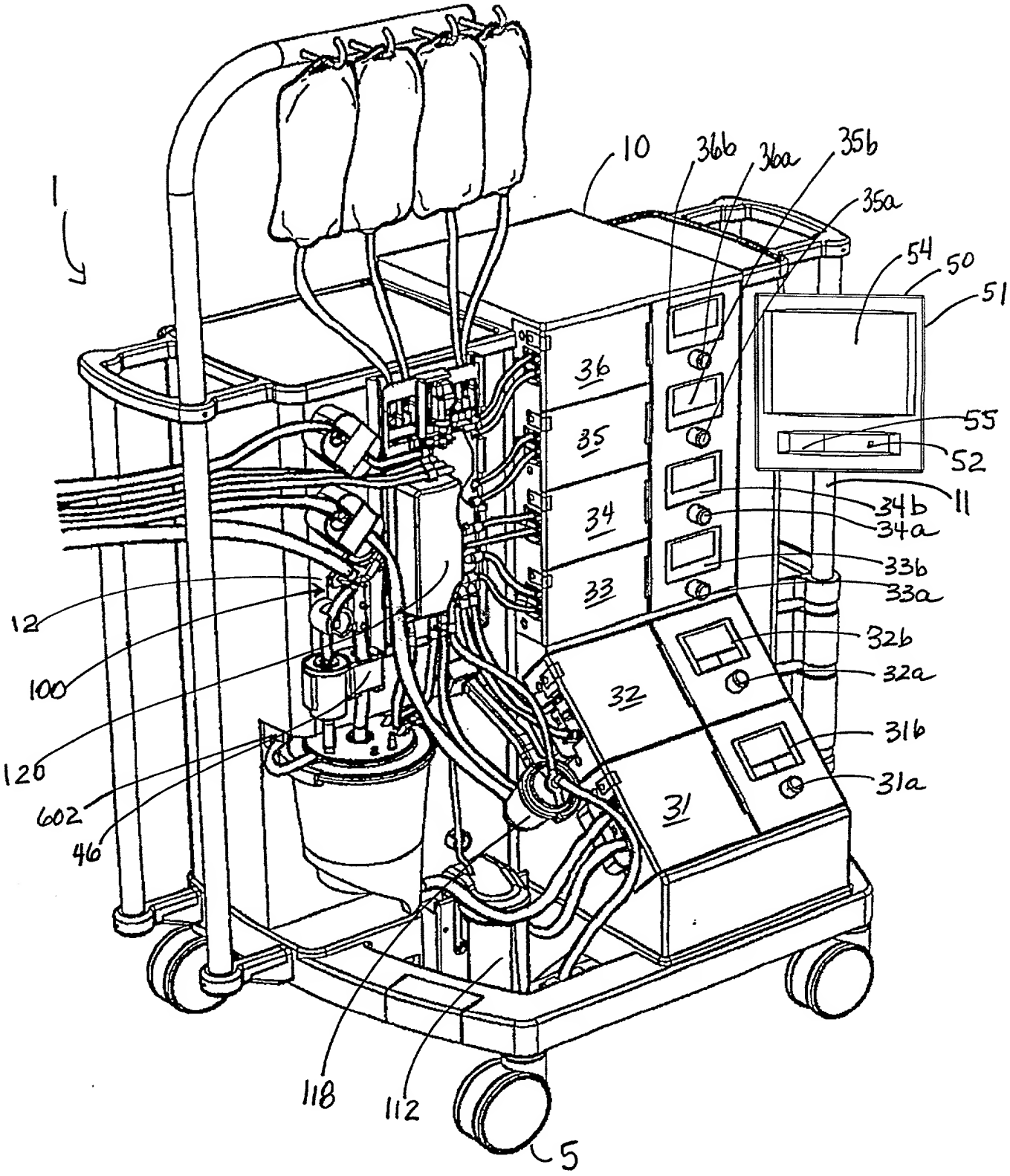

1
10
36b
36a
35b
35a
54
50
51
55
52
11
34b
34a
33b
33a
32b
32a
31b
31a
36
35
34
33
32
31
12
100
120
602
46
118
112
5

FIG. 1

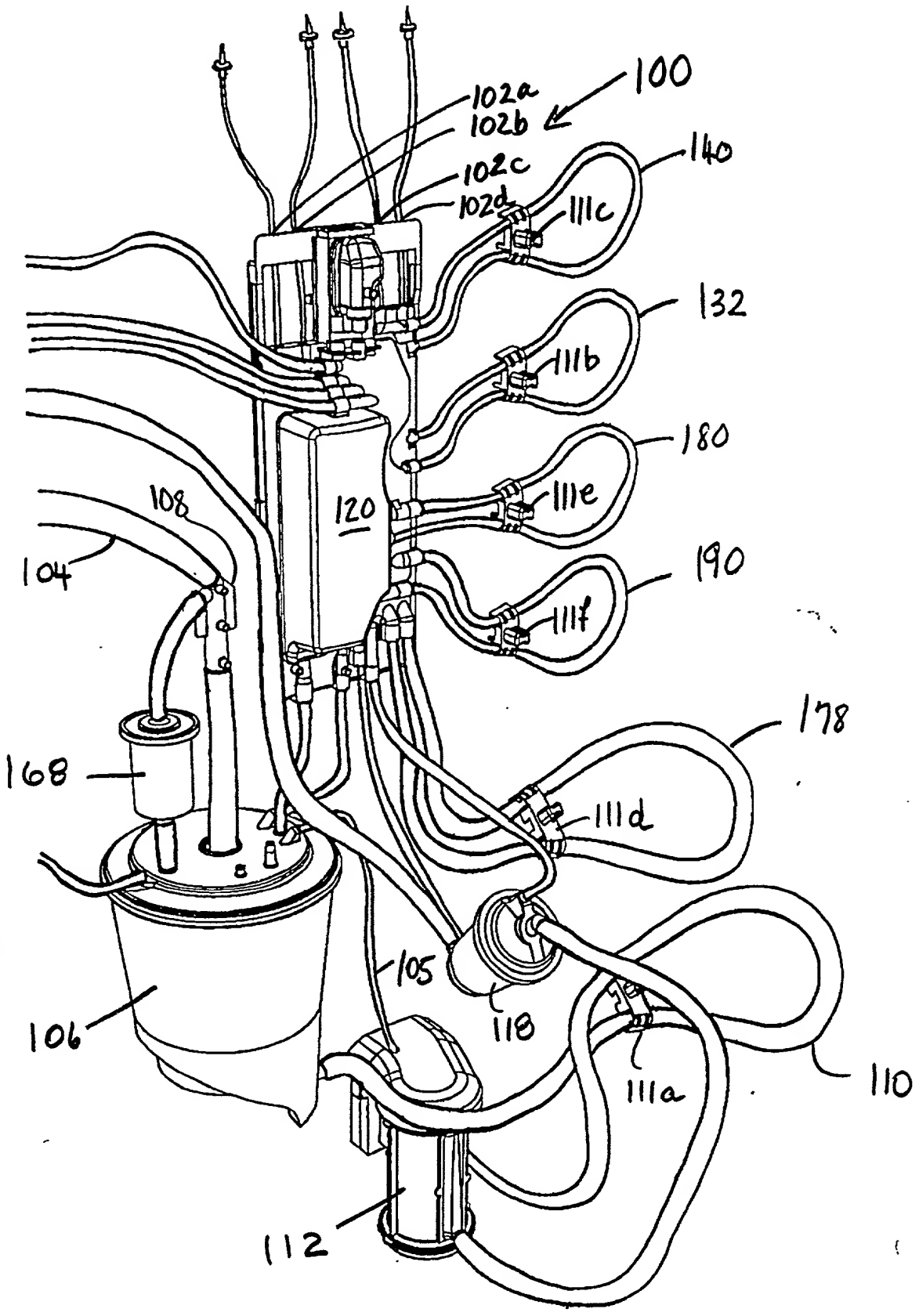

100
102a
102b
102c
102d
140
111c
132
111b
180
111e
190
111f
178
111d
120
108
104
168
106
105
118
111a
110
112

FIG. 2A

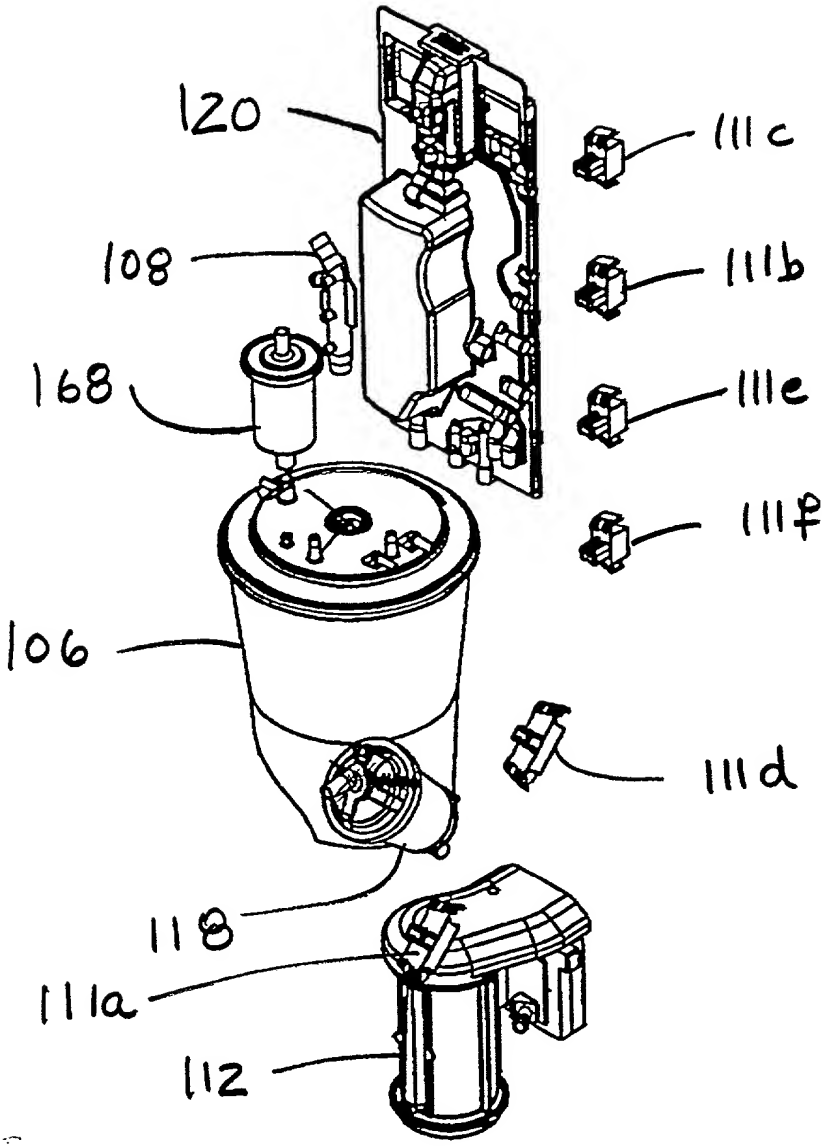


FIG.2B

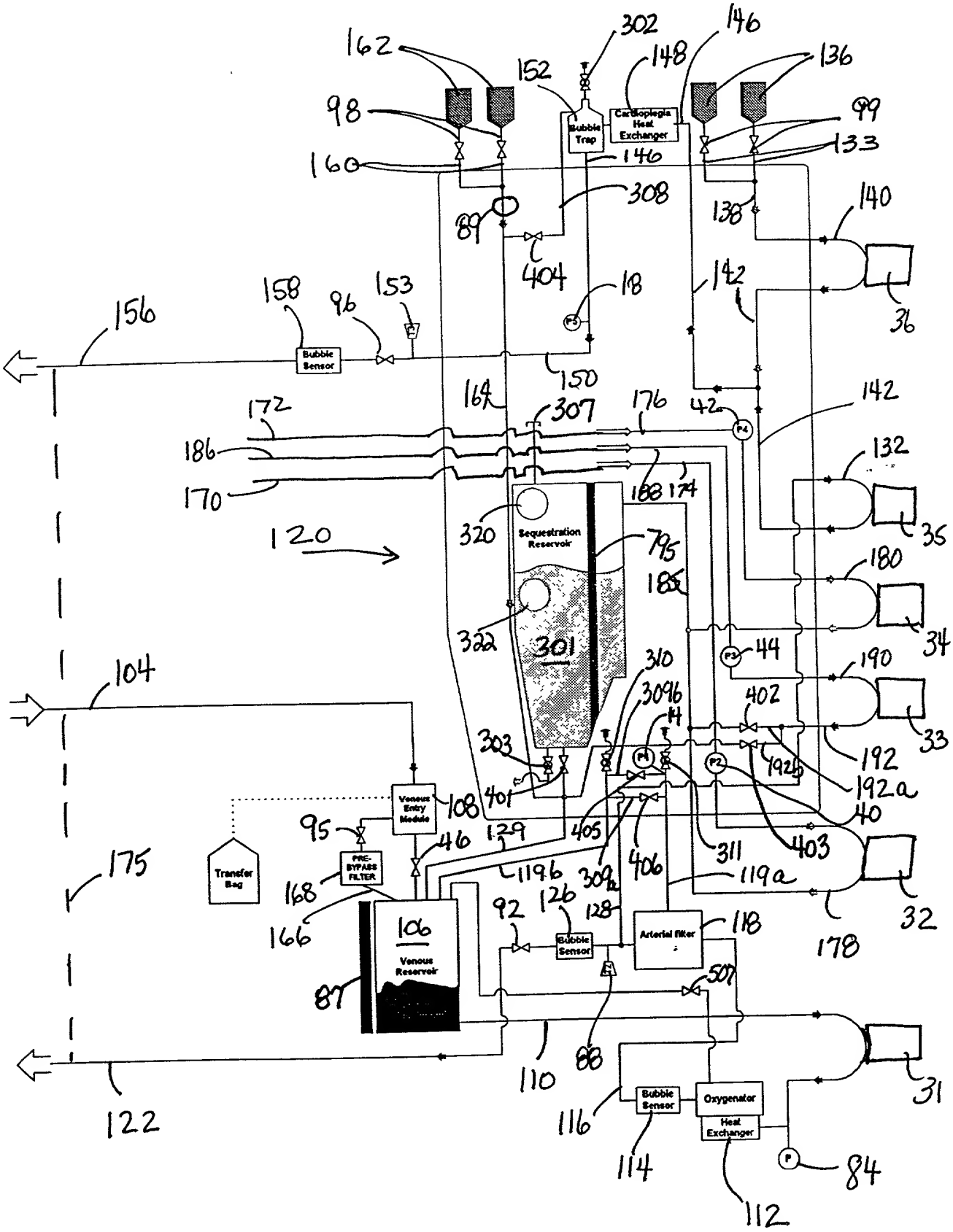

Bubble Trap
Cardioplegia Heat Exchanger
Bubble Sensor
Sequestration Reservoir
Venous Entry Module
PRE-BYPASS FILTER
Transfer Bag
Venous Reservoir
Arterial filter
Bubble Sensor
Oxygenator
Heat Exchanger
120
301
106

FIG. 3A

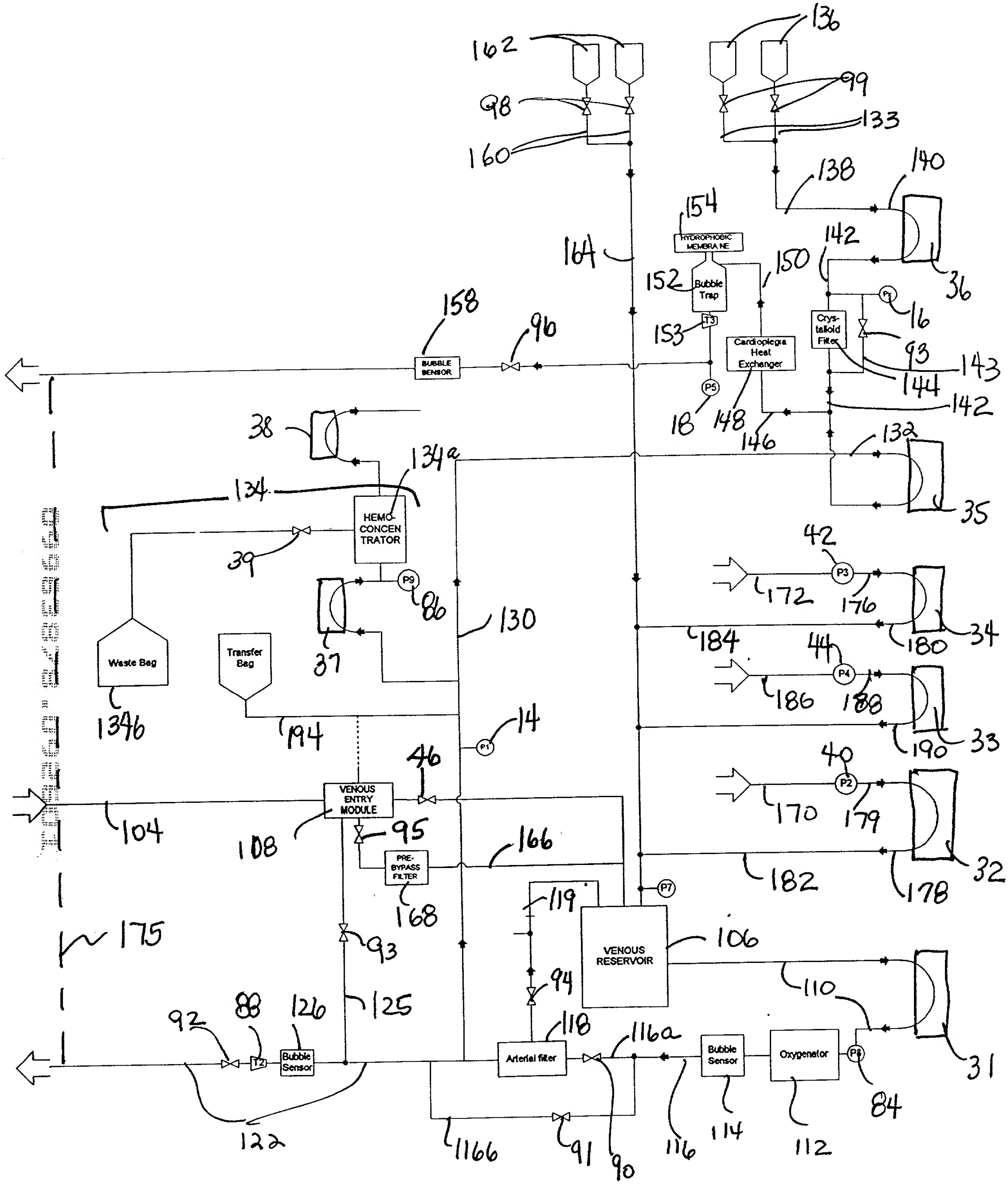

HYDROPHOBIC MEMBRANE
Bubble Trap
T3
Cardioplegia Heat Exchanger
Crys-talloid Filter
P1
P5
BUBBLE SENSOR
HEMO-CONCEN TRATOR
P9
Waste Bag
Transfer Bag
P1
P3
P4
P2
VENOUS ENTRY MODULE
PRE-BYPASS FILTER
P7
VENOUS RESERVOIR
T2
Bubble Sensor
Arterial filter
Bubble Sensor
Oxygenator
P8
162
136
98
99
160
133
138
140
154
164
142
152
150
36
158
96
153
16
93
143
144
18
148
146
142
38
134a
132
134
35
39
42
86
172
176
34
130
37
184
180
44
1346
186
188
33
14
194
190
40
46
170
179
104
95
166
108
32
182
178
168
119
106
175
93
110
94
92
88
126
125
118
116a
31
84
122
1166
91
90
116
114
112

FIG. 3B

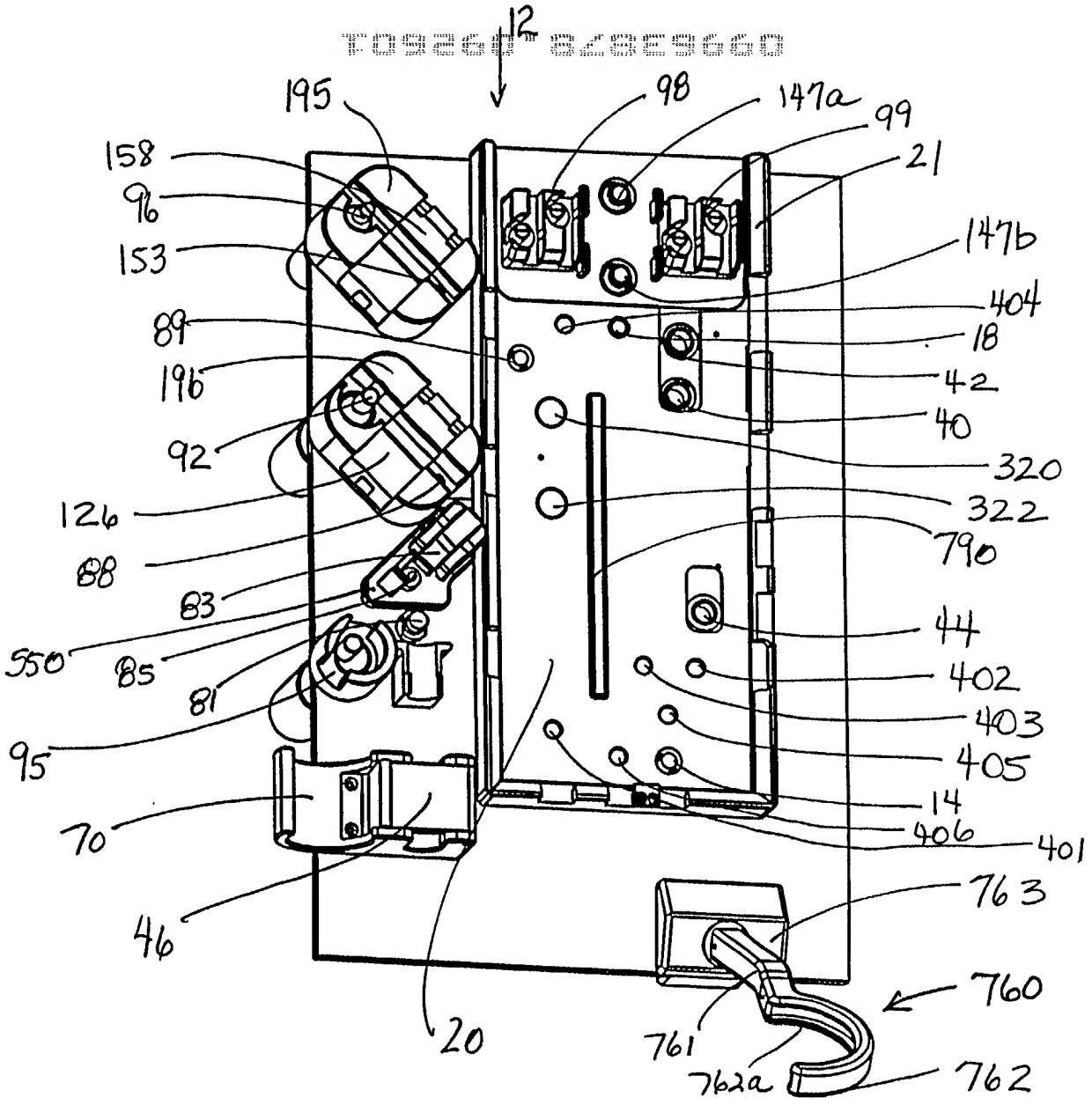

12
195
98
147a
99
21
158
96
153
147b
404
89
18
196
42
92
40
320
126
322
88
790
83
44
550
85
402
81
403
95
405
14
70
406
401
763
46
760
20
761
762a
762

FIG. 4

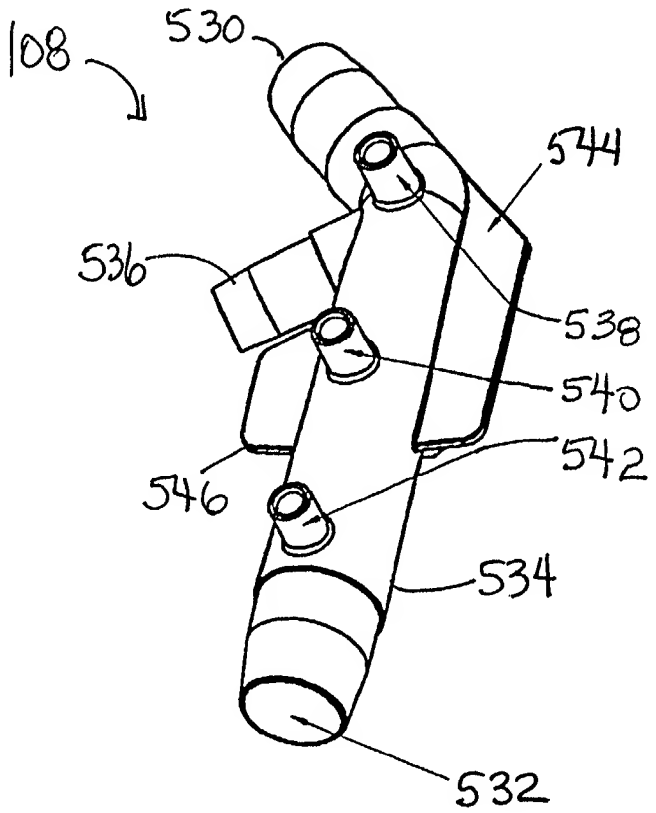

108
530
544
536
538
540
542
546
534
532

FIG. 5A

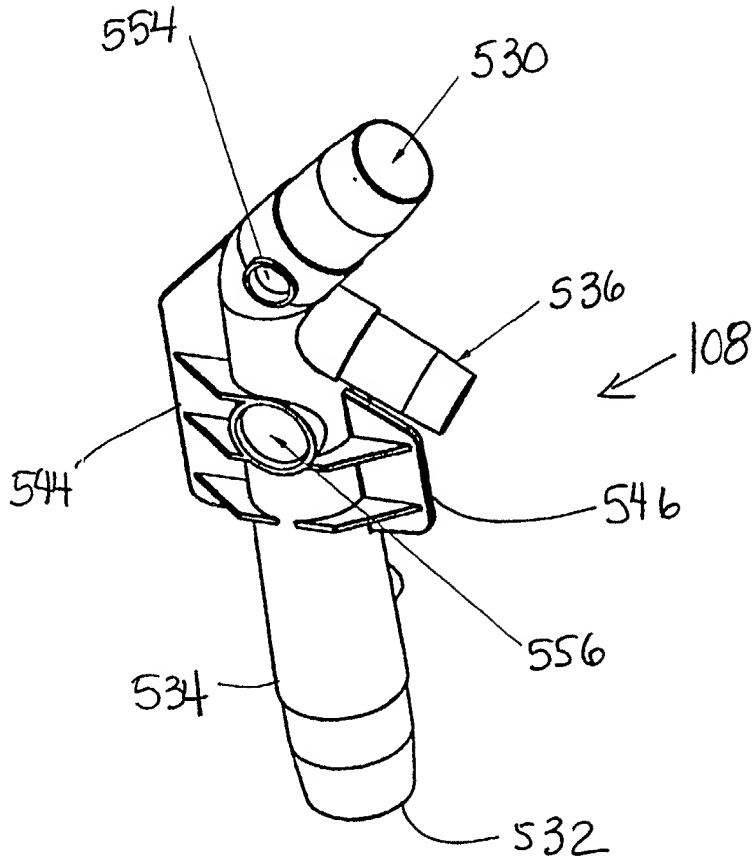

554
530
536
108
544
546
556
534
532

FIG. 5B

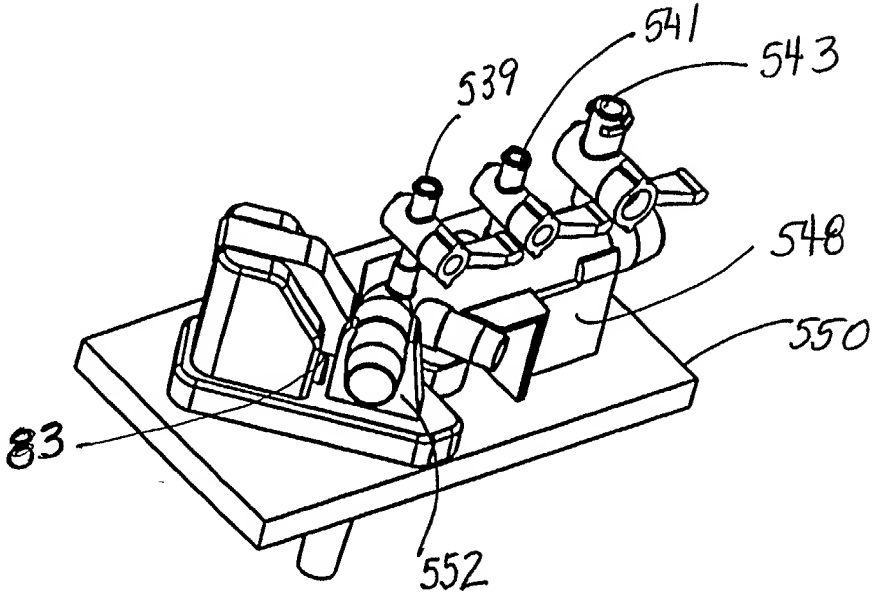

541
543
539
548
550
83
552

FIG. 5D

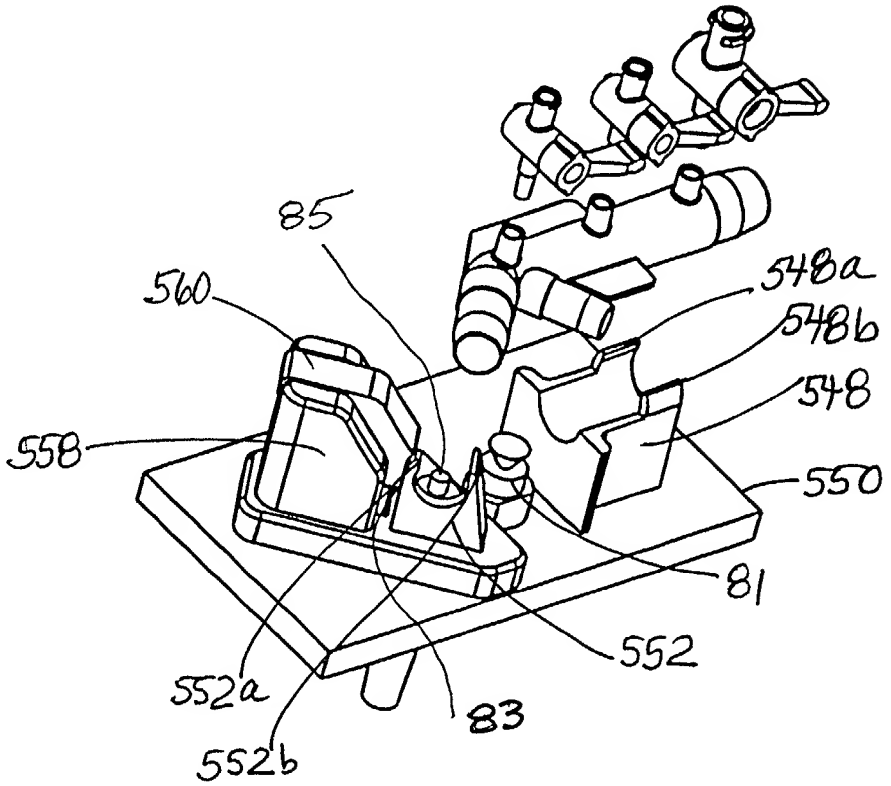

85
560
548a
548b
548
558
550
81
552
552a
83
552b

FIG. 5C

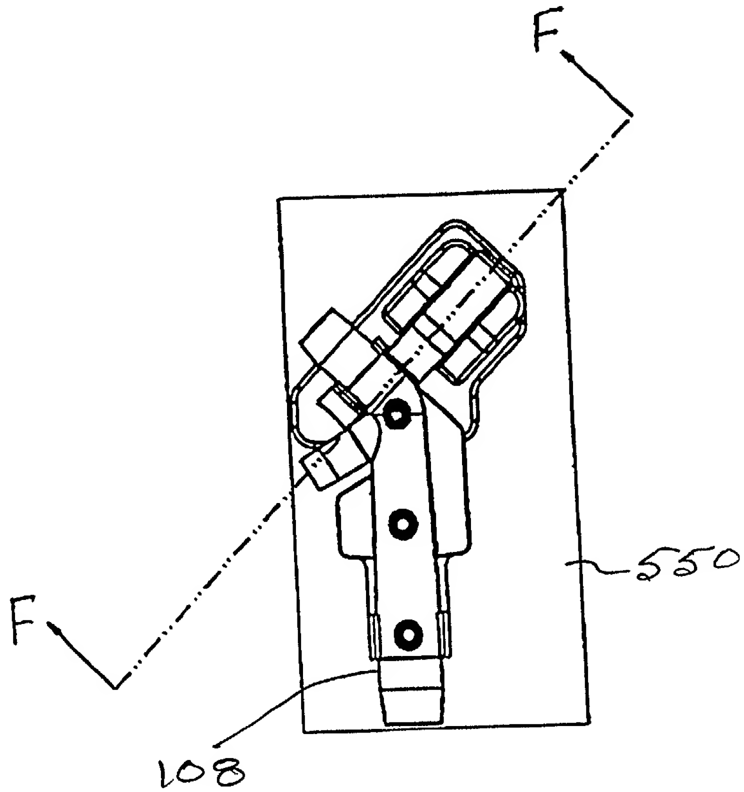


FIG. 5E

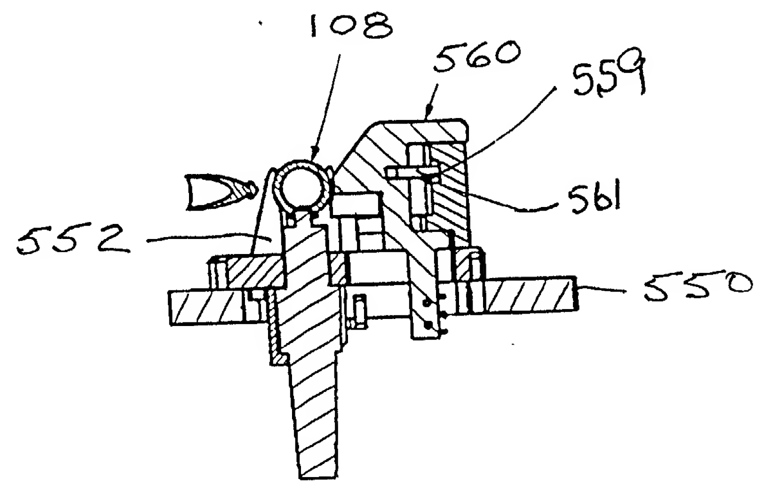


FIG. 5F

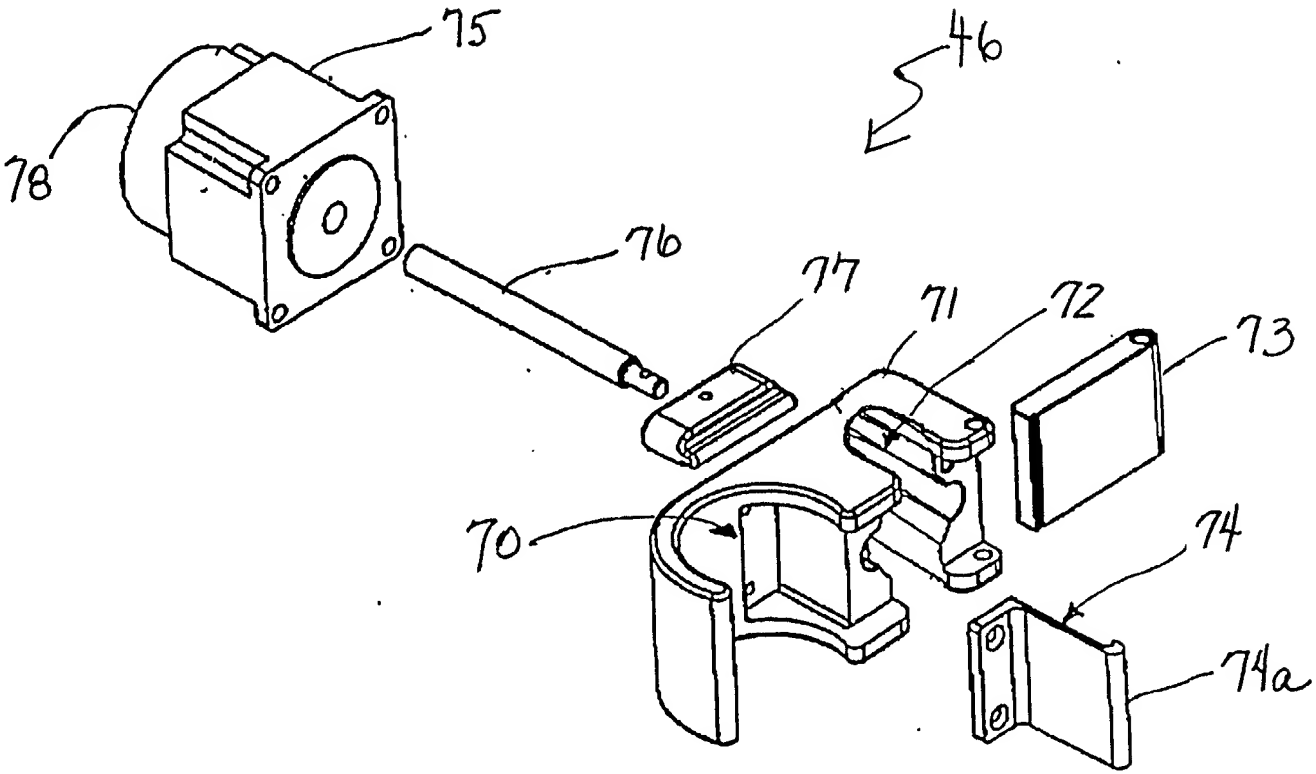


FIG. 6A

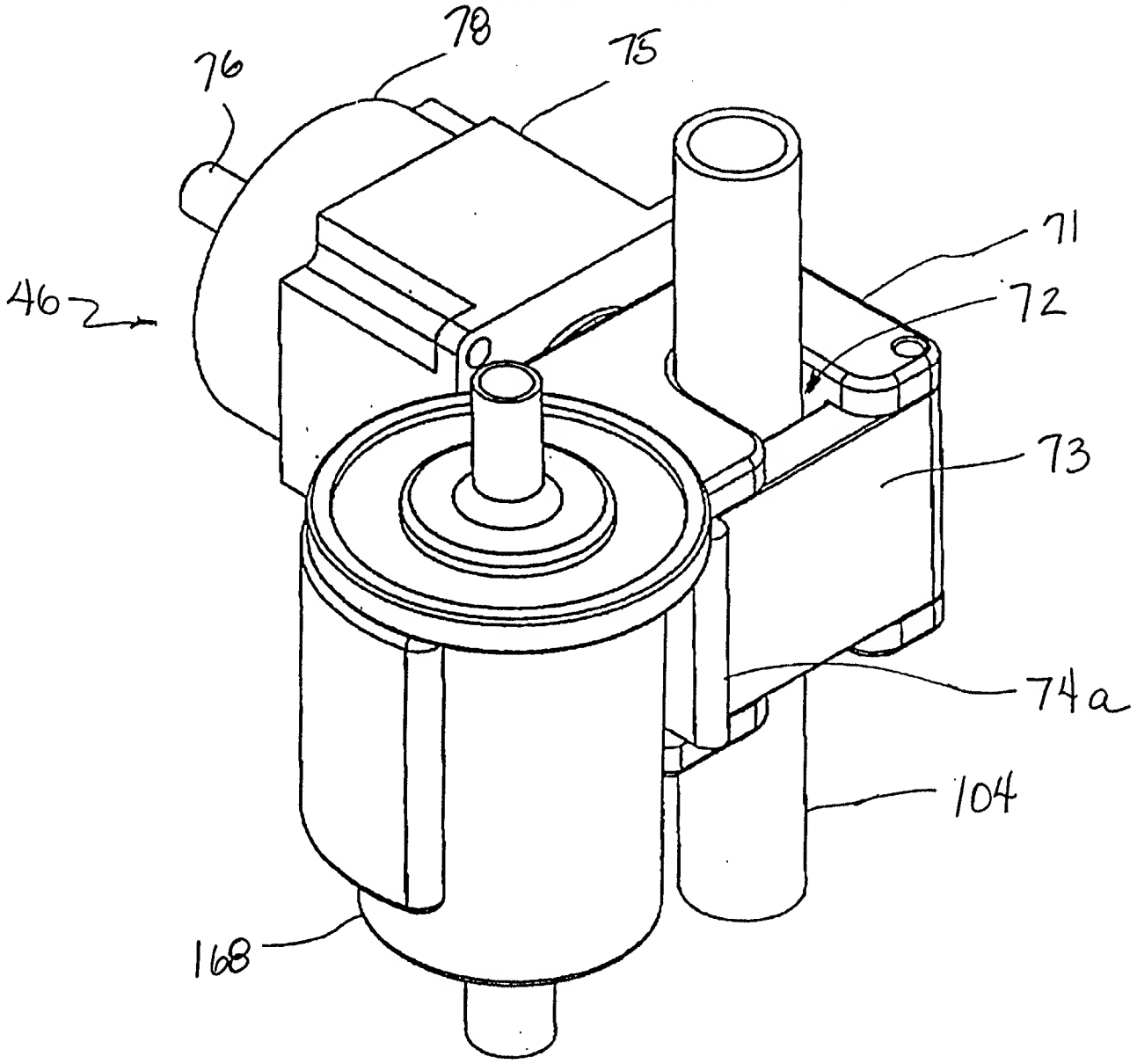


FIG. 6B

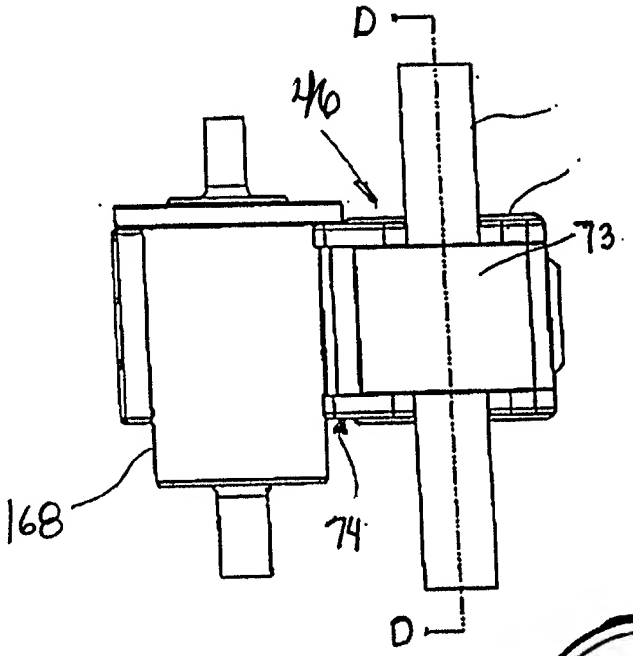


FIG. 6C

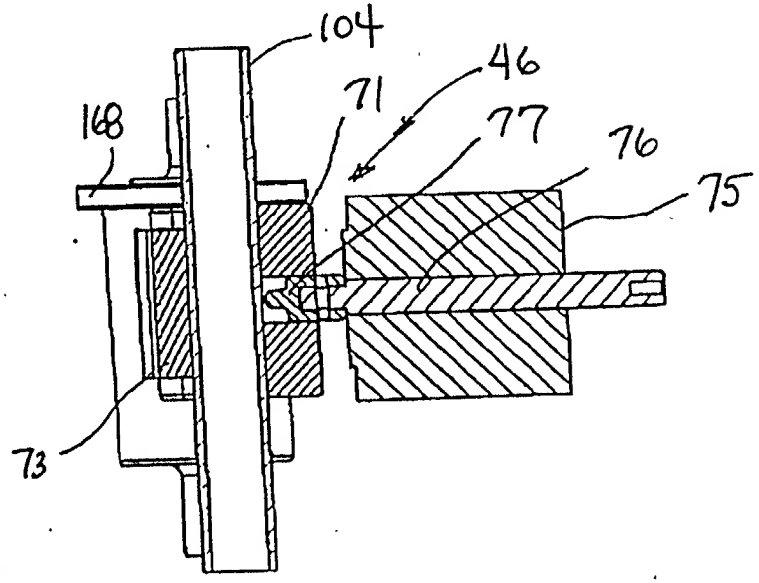


FIG. 6D

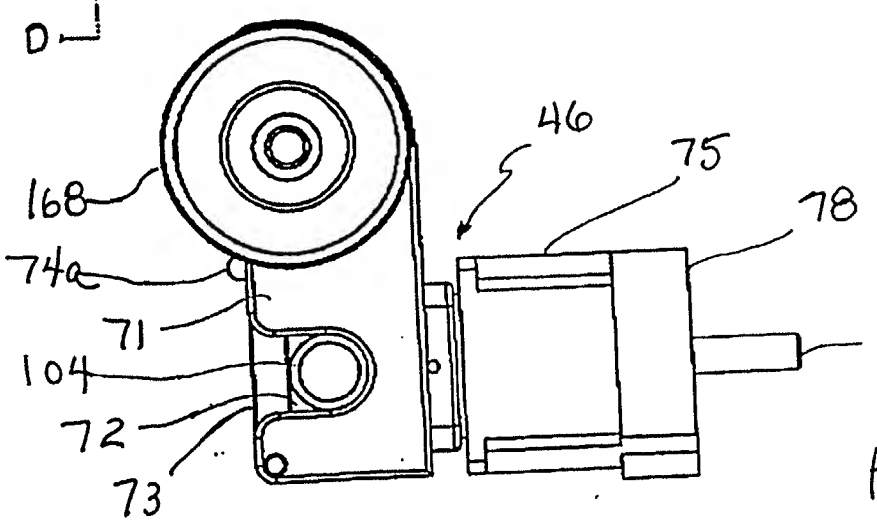


FIG. 6E

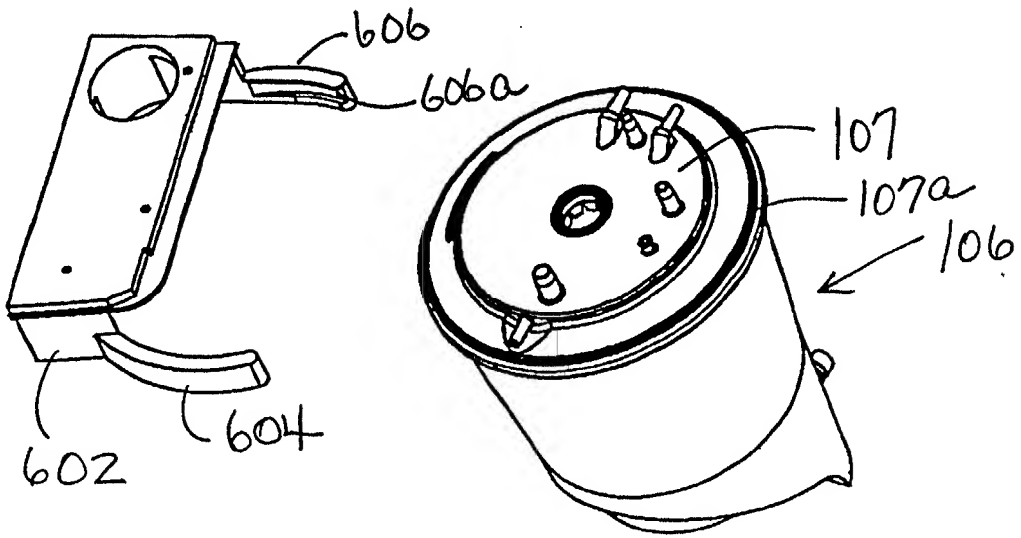


FIG. 7A

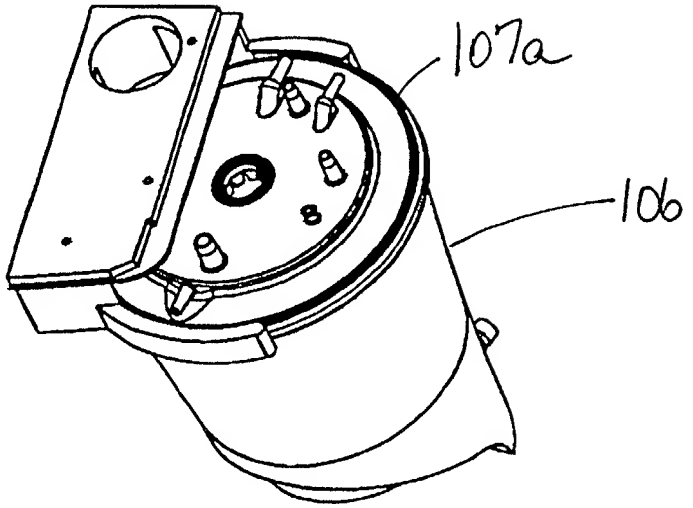


FIG. 7B

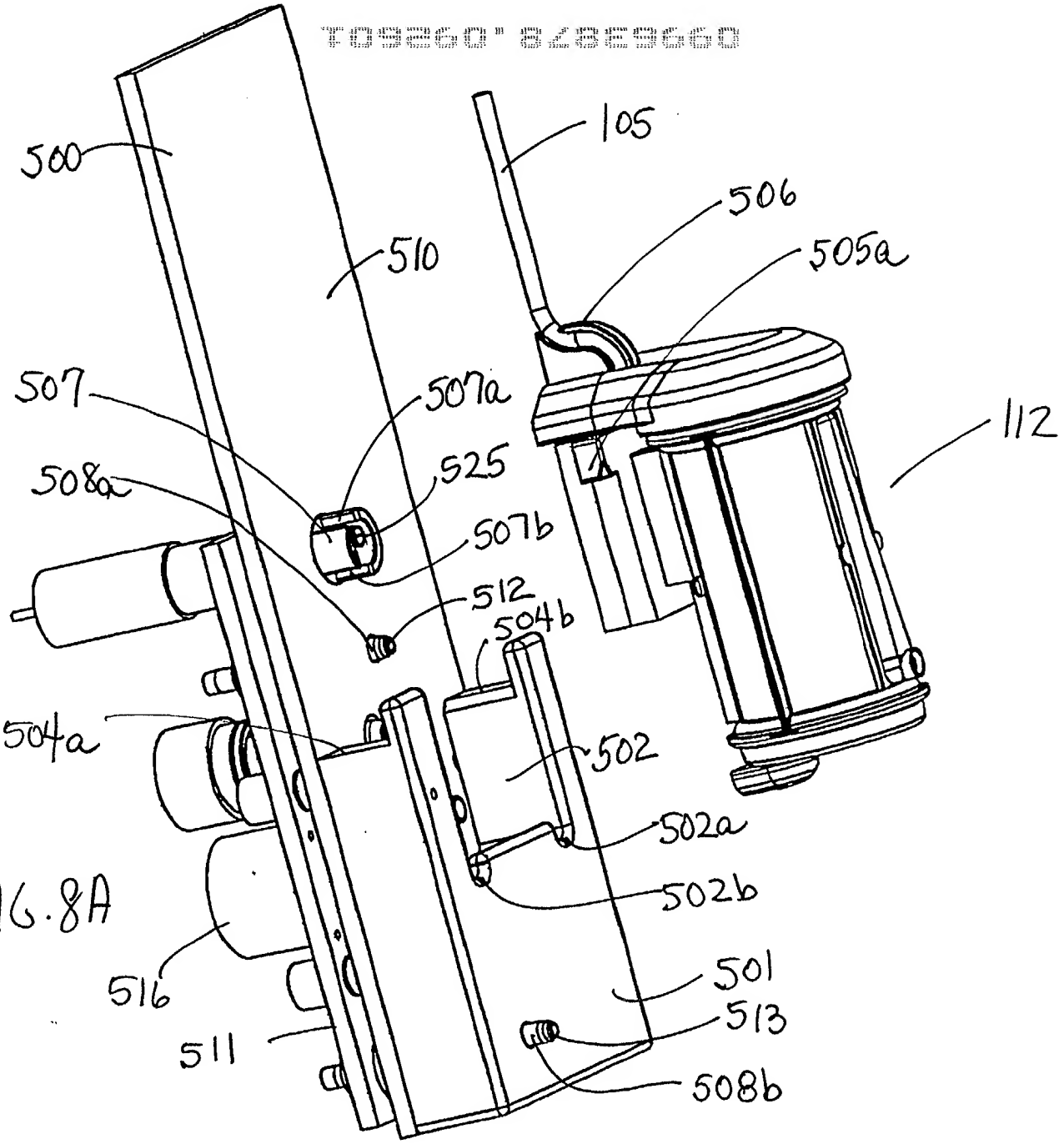

500
105
506
505a
510
507
507a
525
112
508a
507b
512
504b
504a
502
502a
502b
501
513
516
511
508b

FIG. 8A

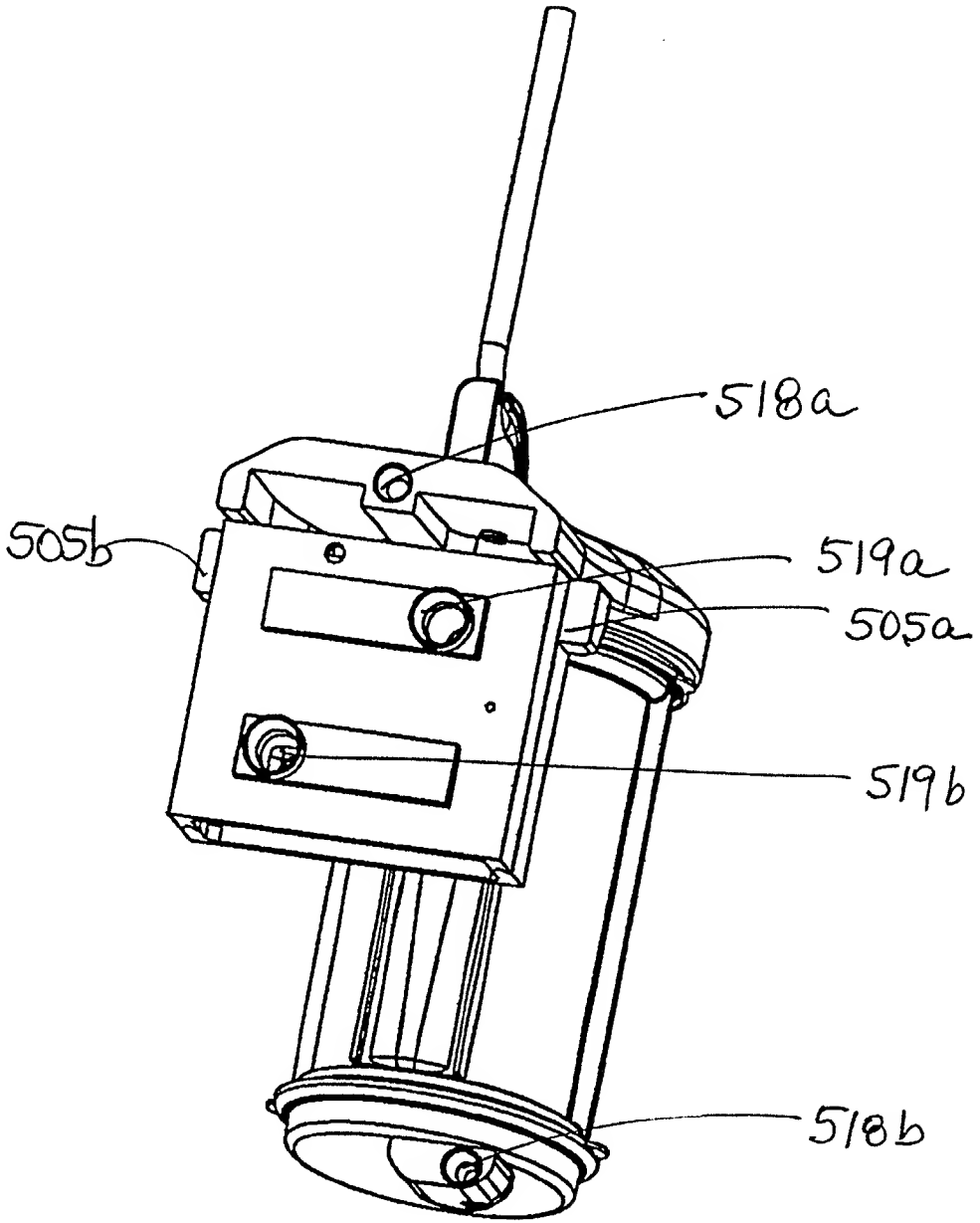


FIG. 8B

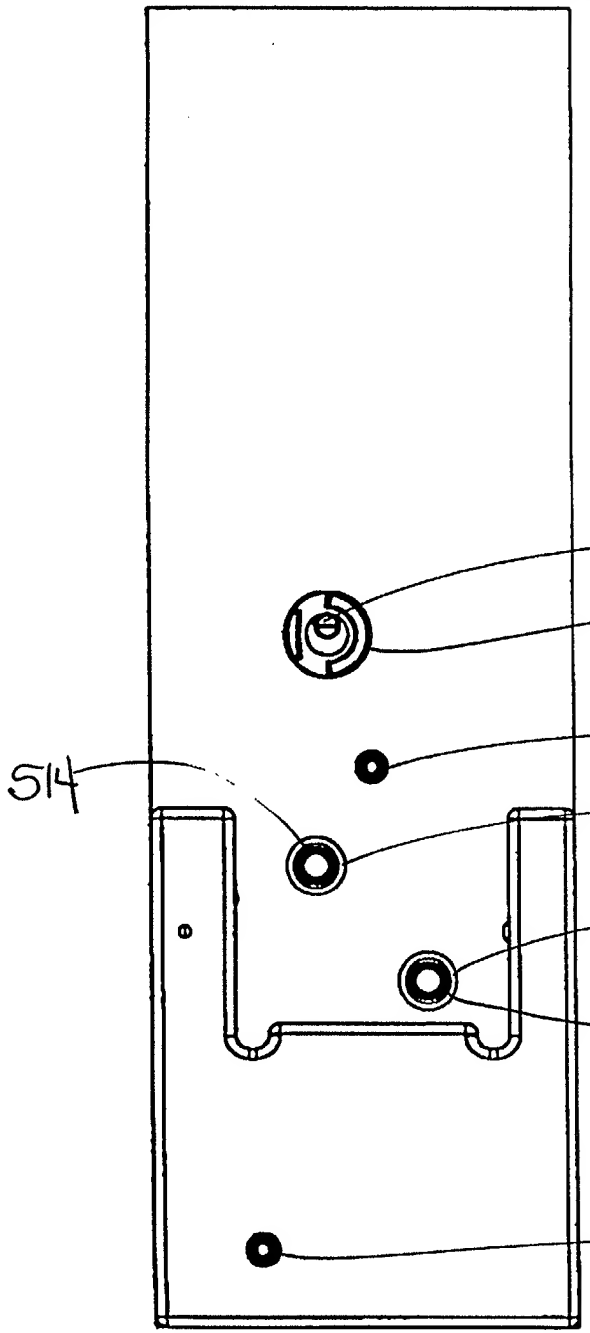


FIG. 8C

FIG. 8D

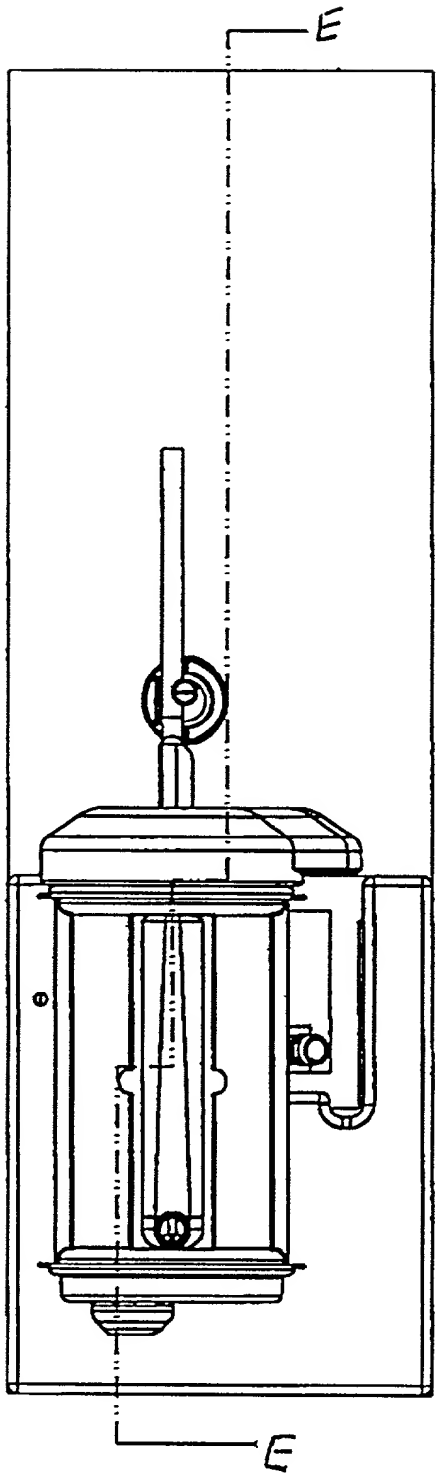
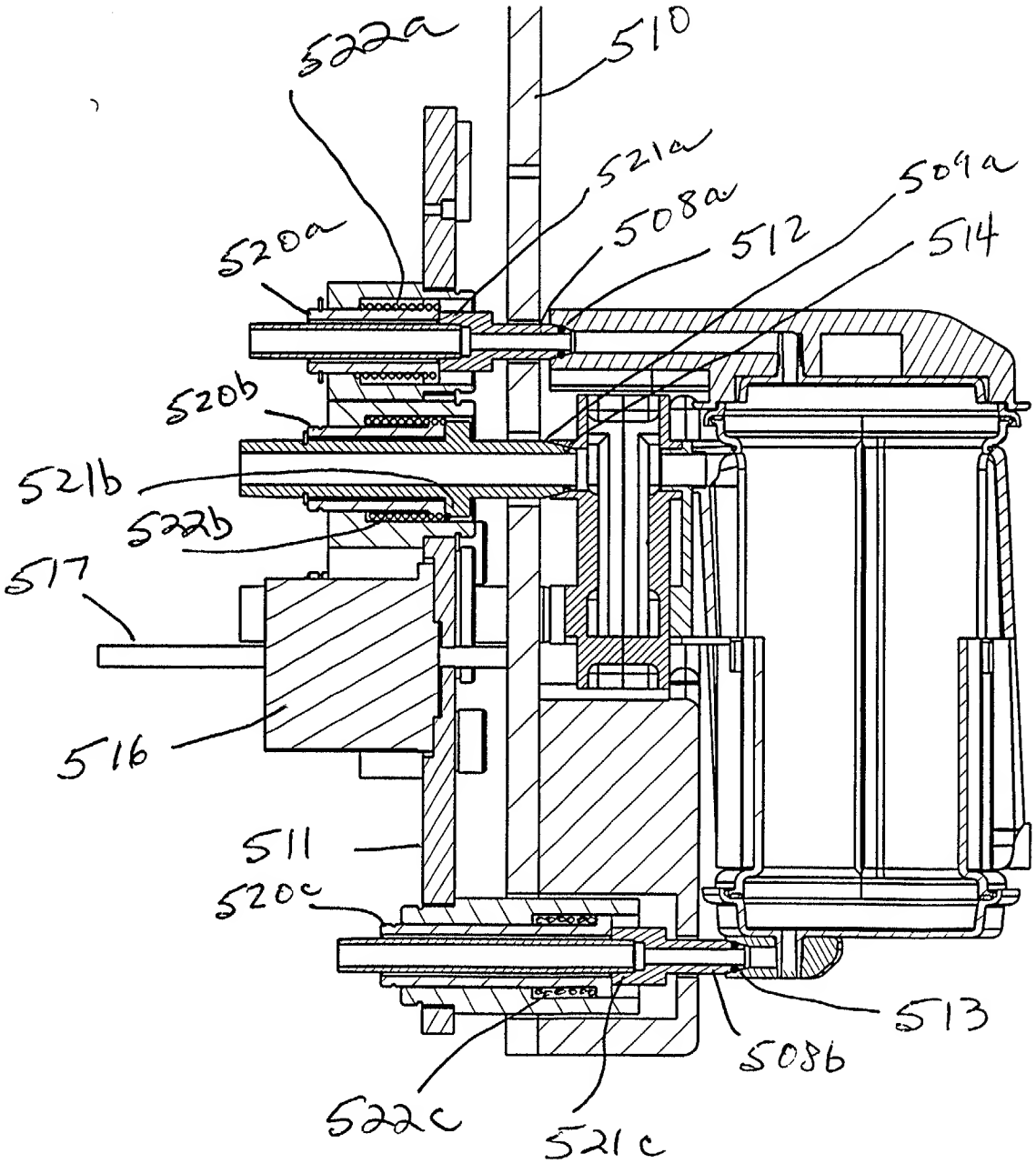


FIG. 8E



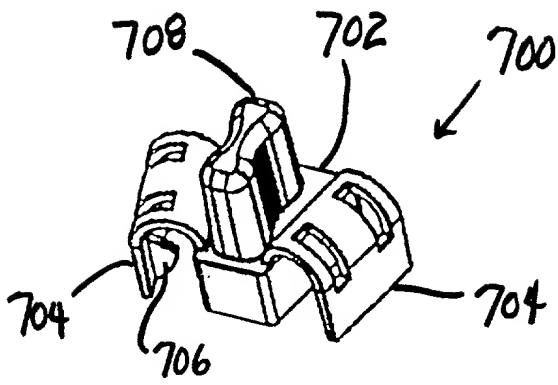


FIG. 9A

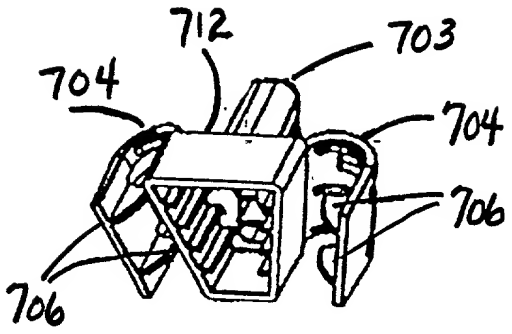


FIG. 9B

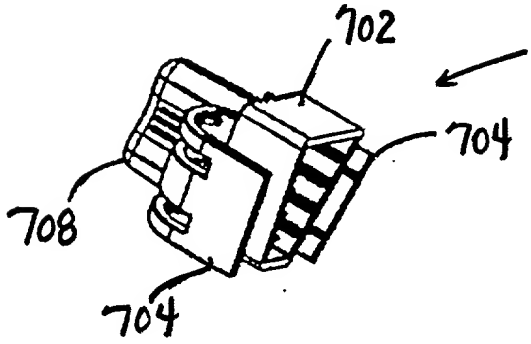


FIG. 9C

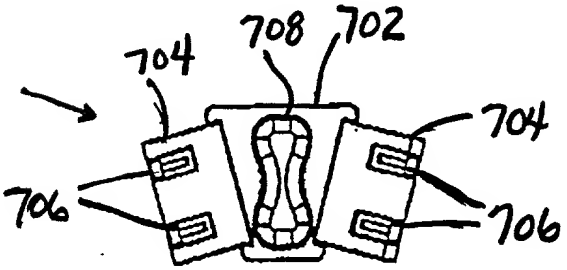


FIG. 9D

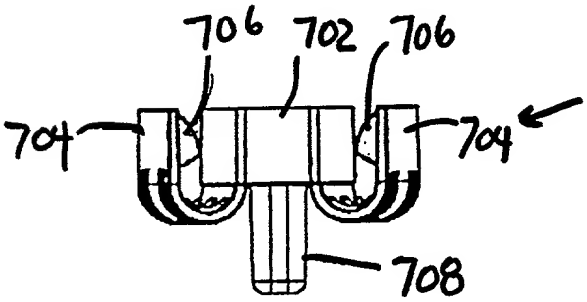


FIG. 9E

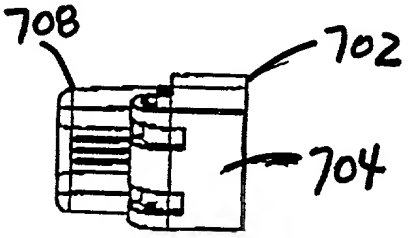
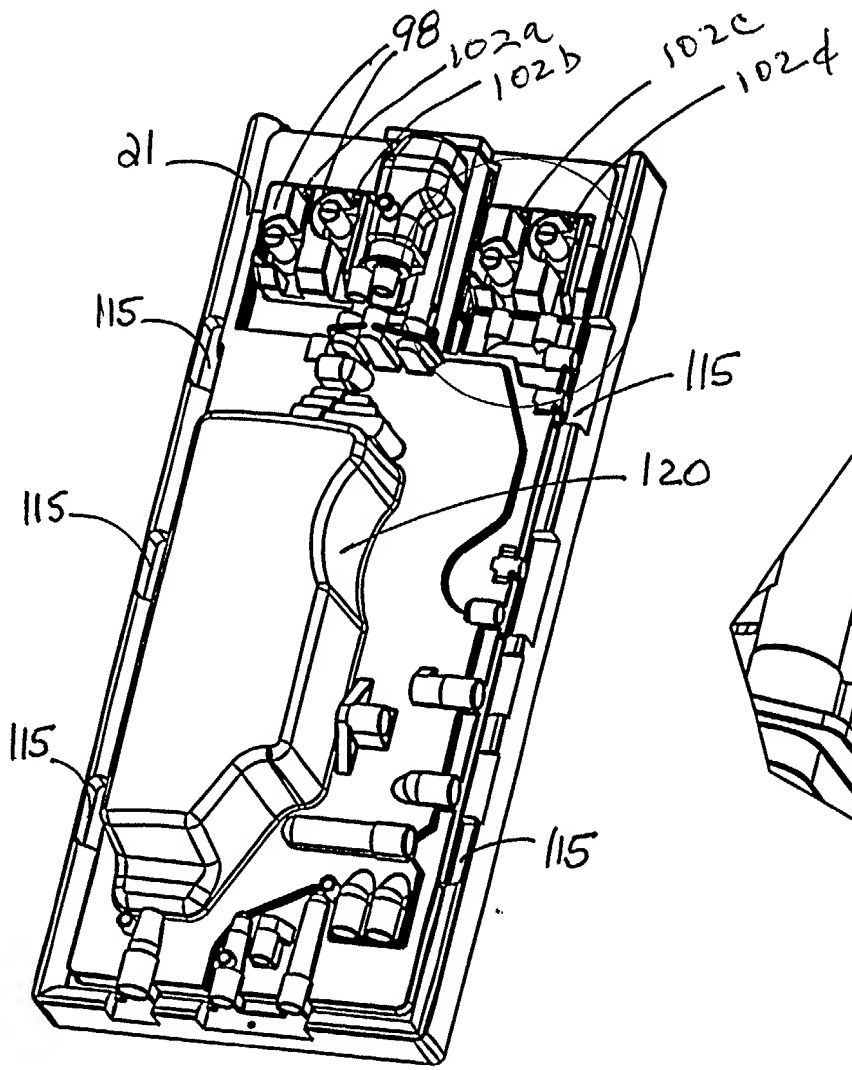
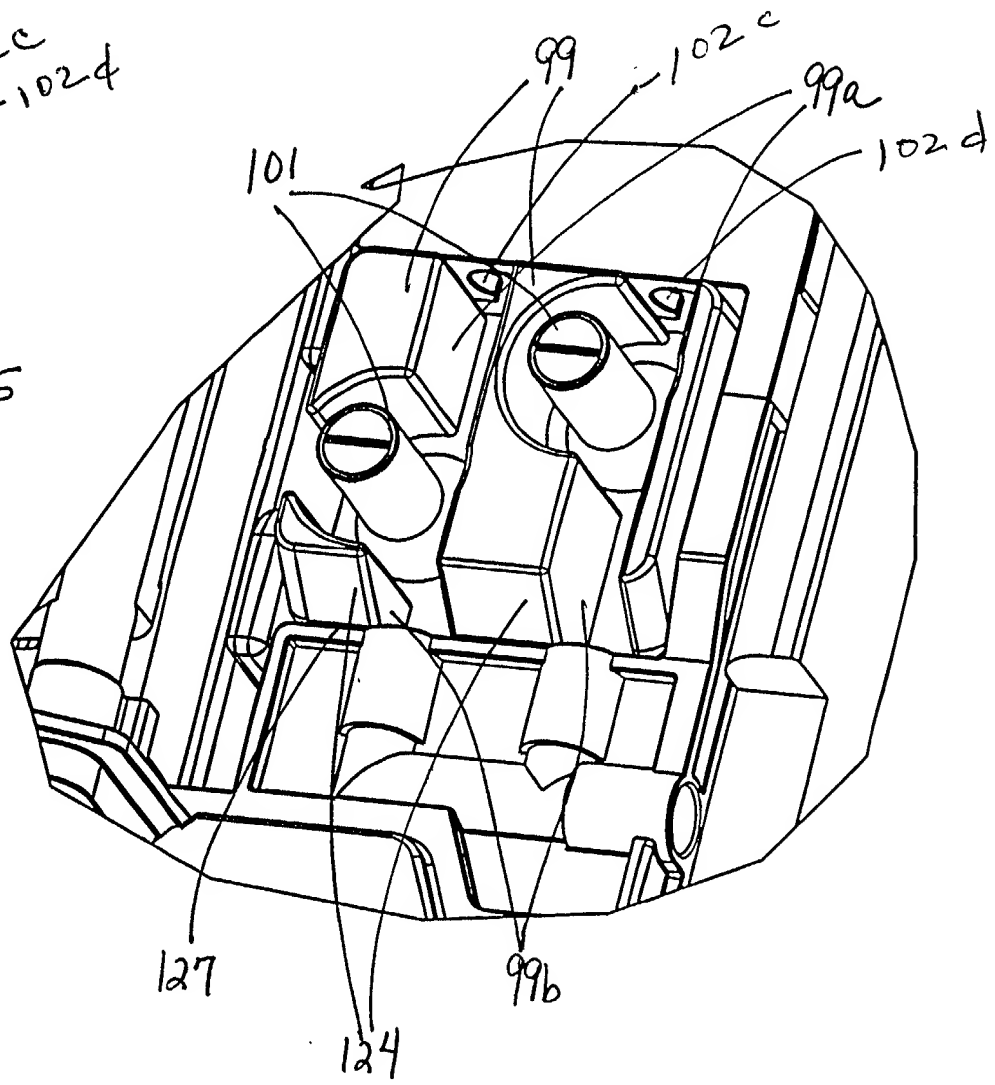


FIG. 9F



F16.10A



F16.10B

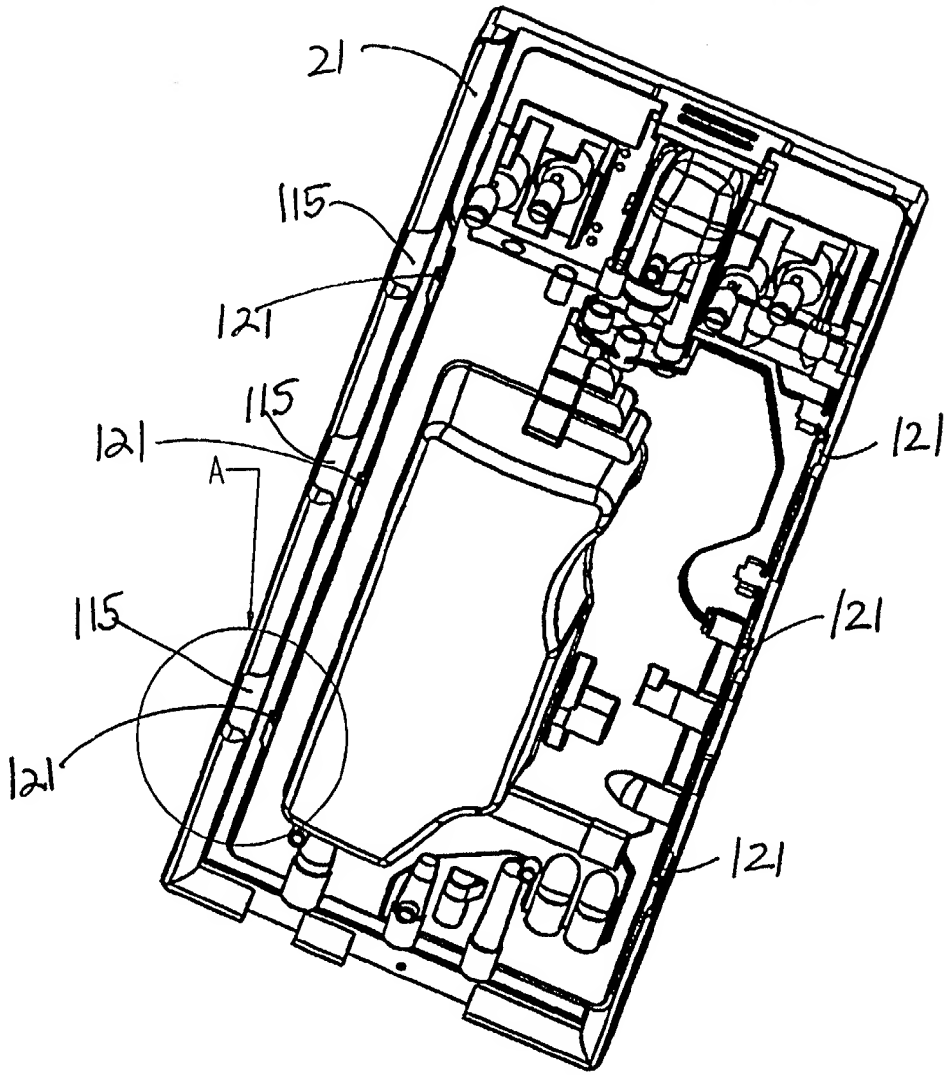


FIG. 10C

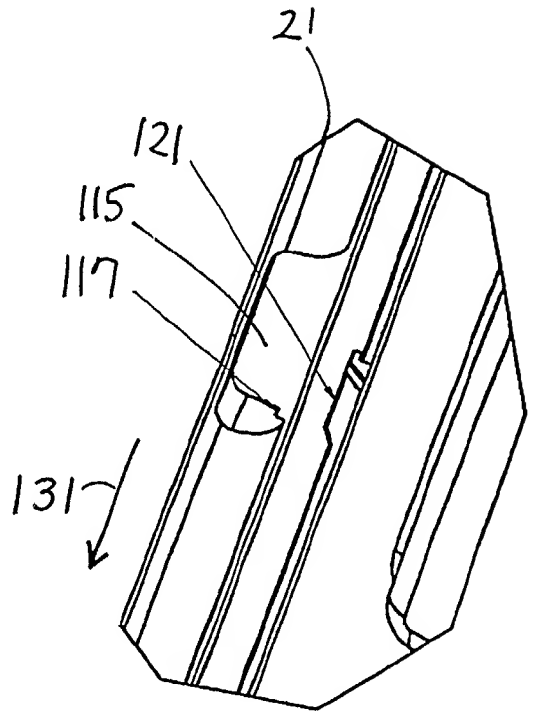


FIG. 10D

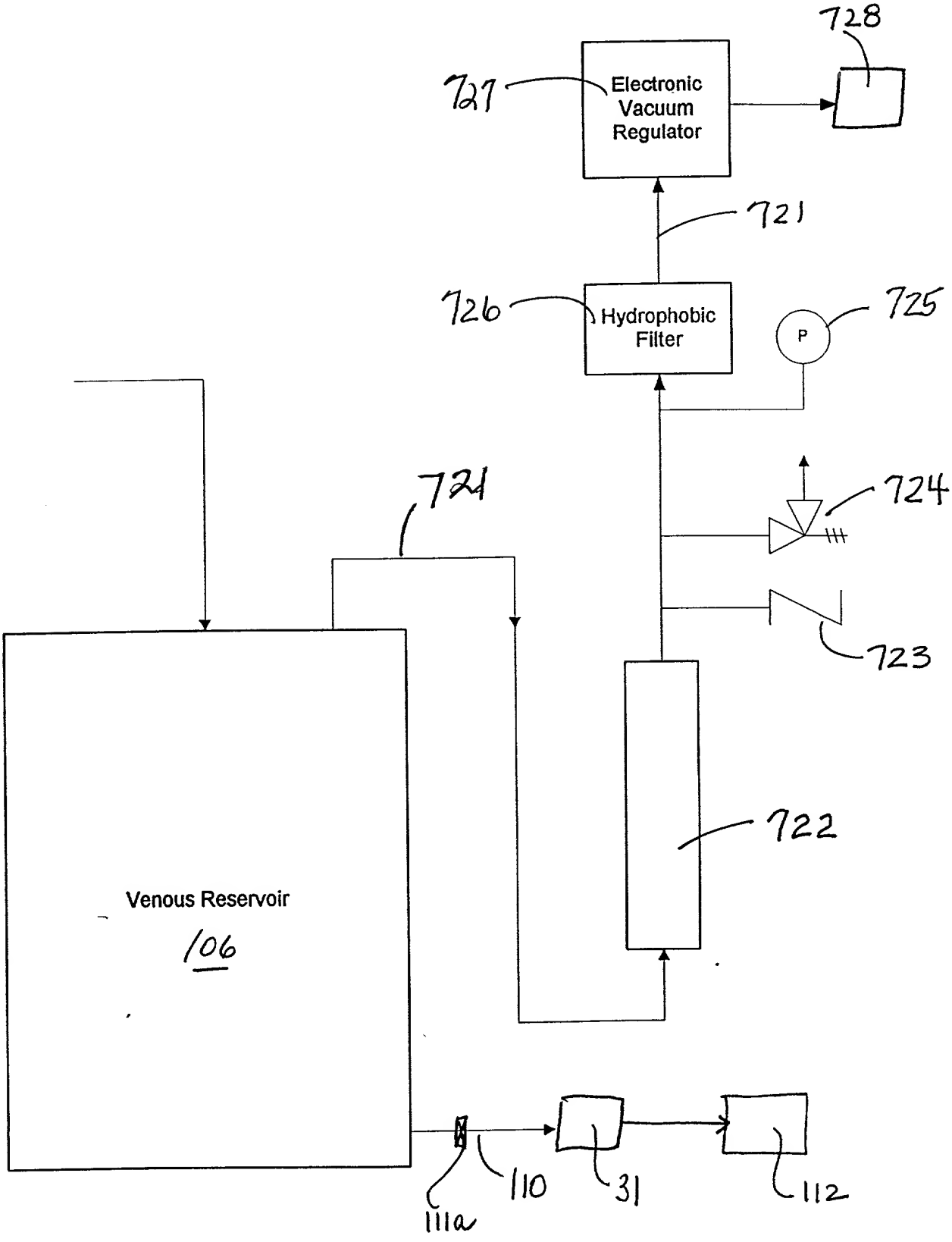

728
727
Electronic Vacuum Regulator
721
726
Hydrophobic Filter
725
P
721
724
723
722
Venous Reservoir
106
111a
110
31
112

FIG. 11

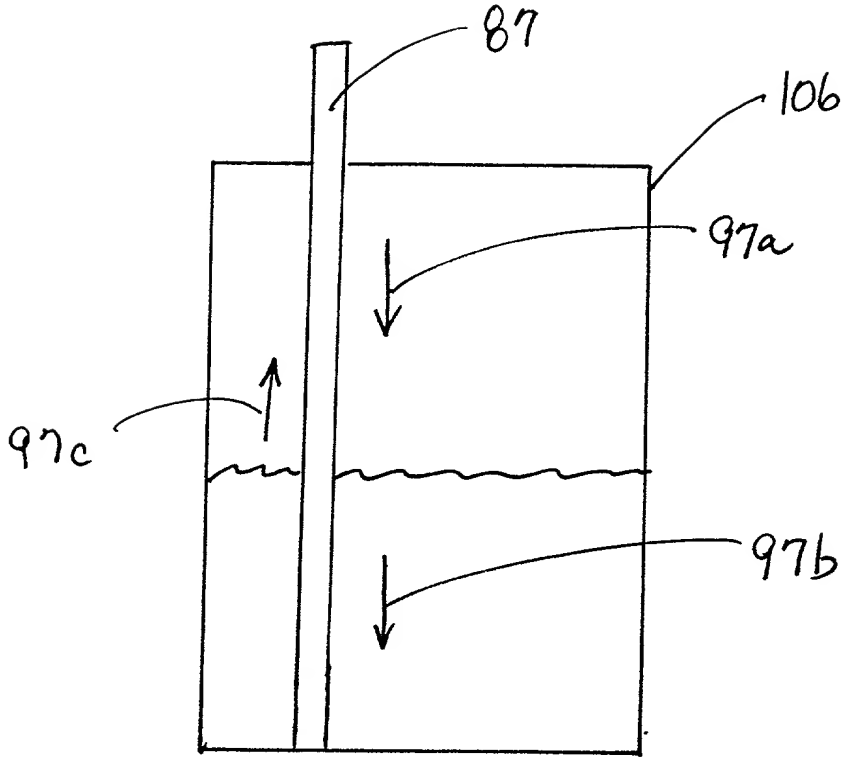


FIG. 12

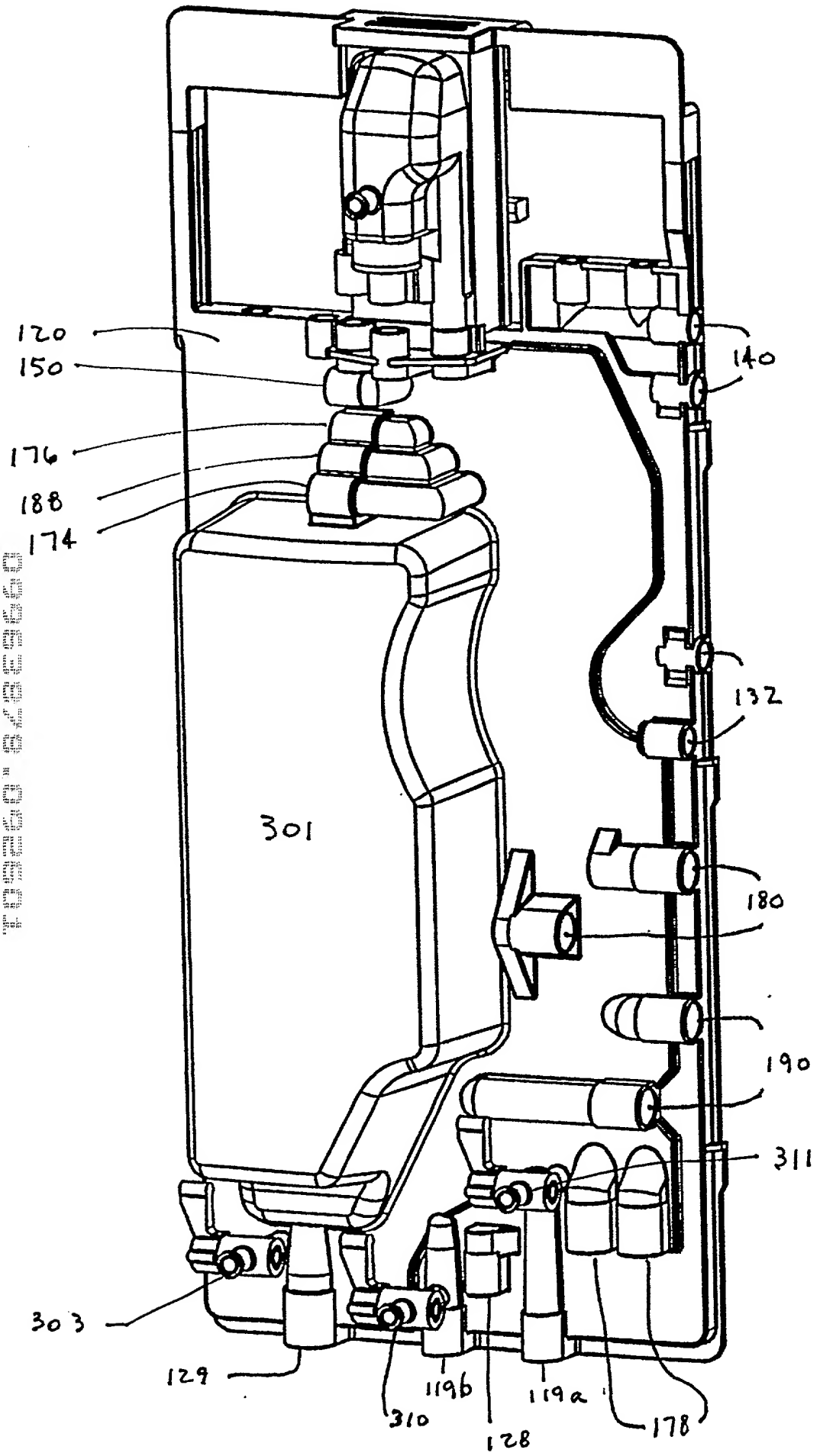

120
150
176
188
174
140
132
180
190
311
301
303
129
310
119b
128
119a
178

FIG. 13

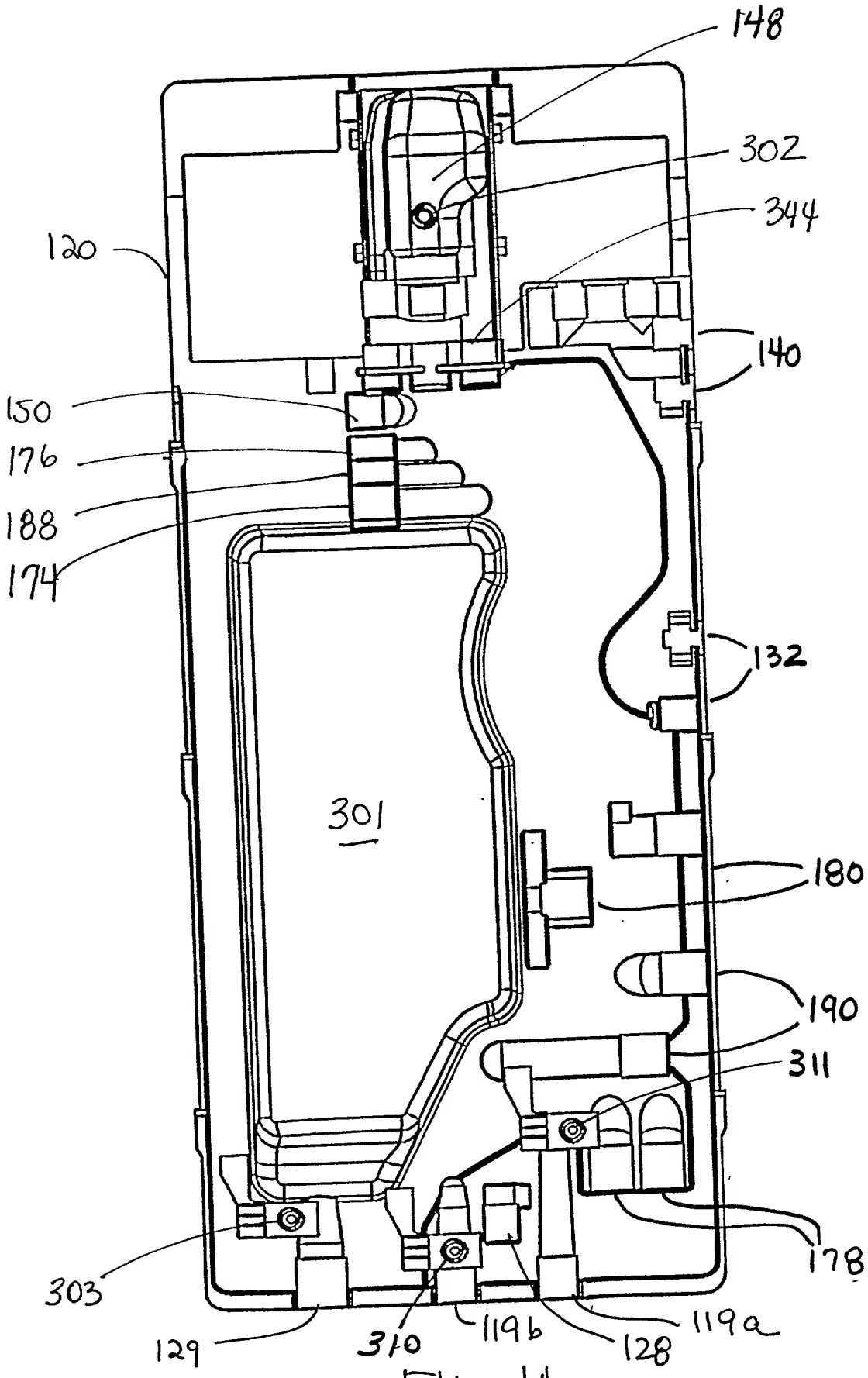

148
302
344
120
140
150
176
188
174
132
301
180
190
311
178
303
129
310
119b
128
119a

FIG. 14

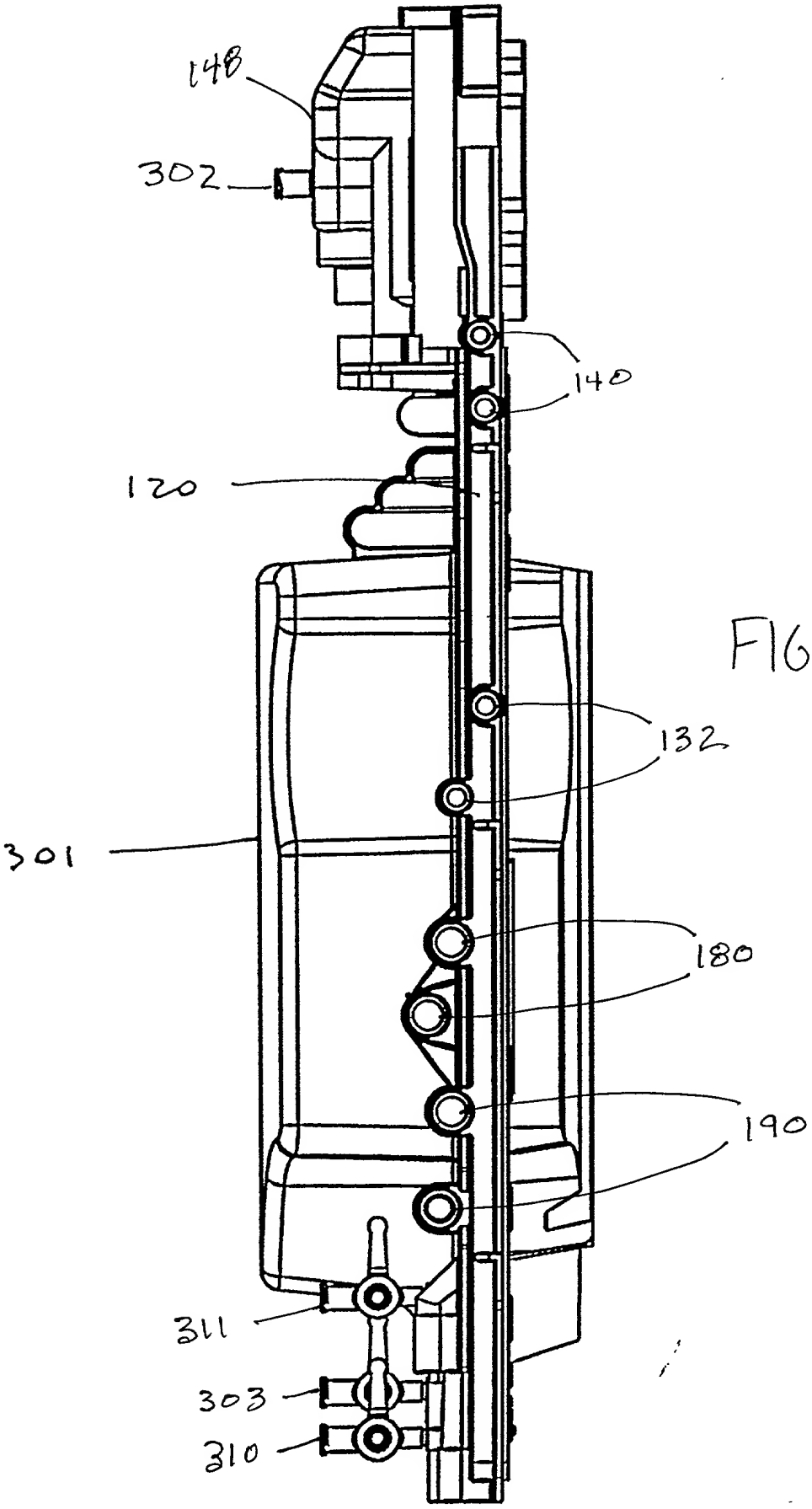


FIG. 15

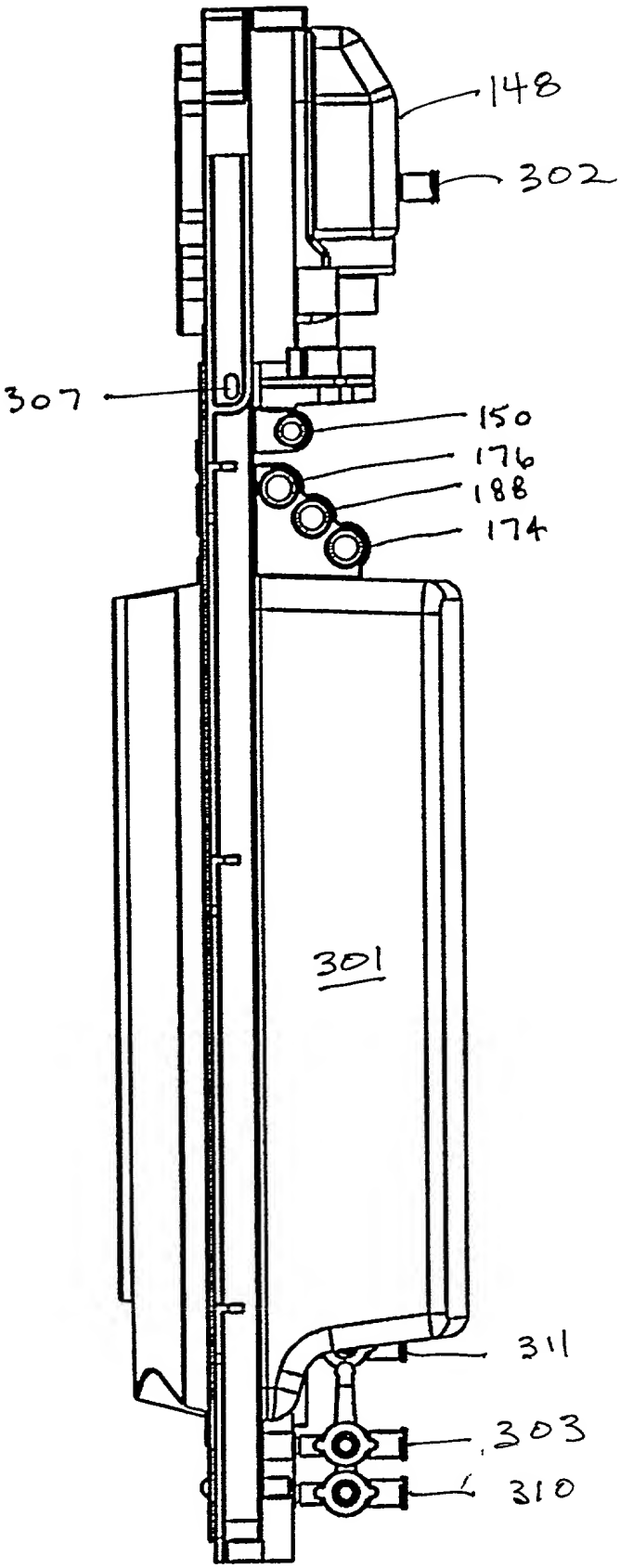


FIG. 16

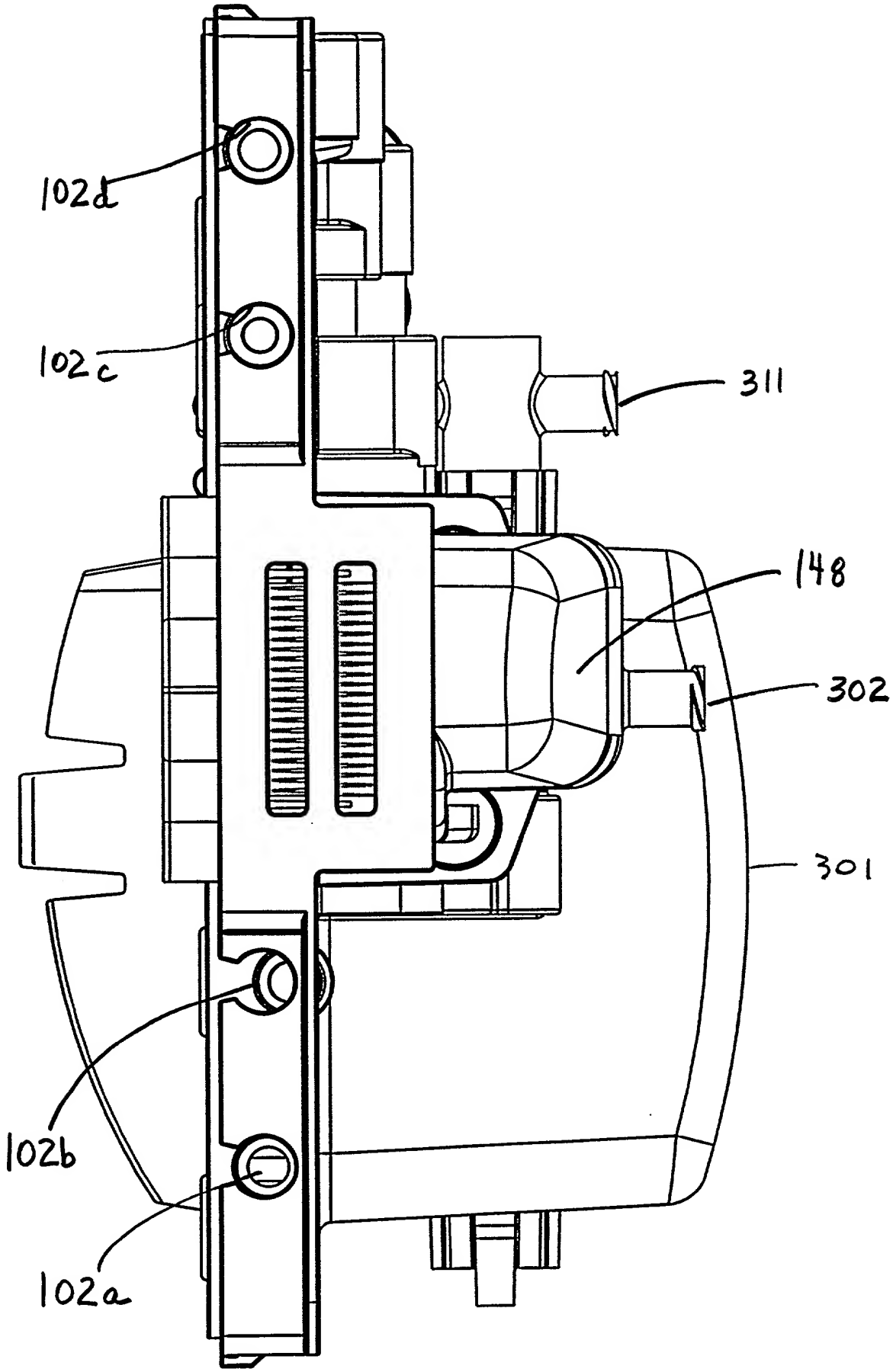


FIG. 17

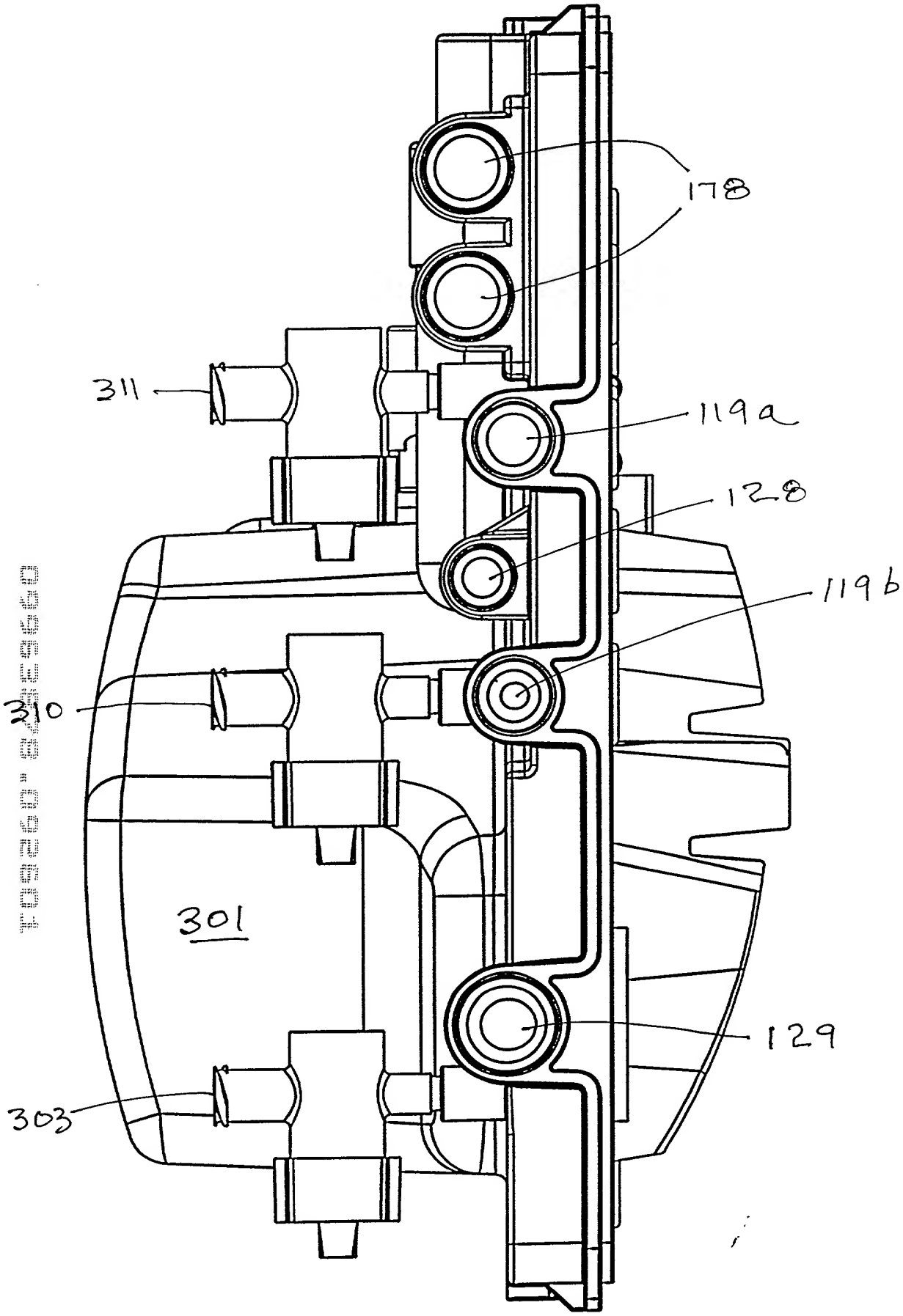


FIG. 18

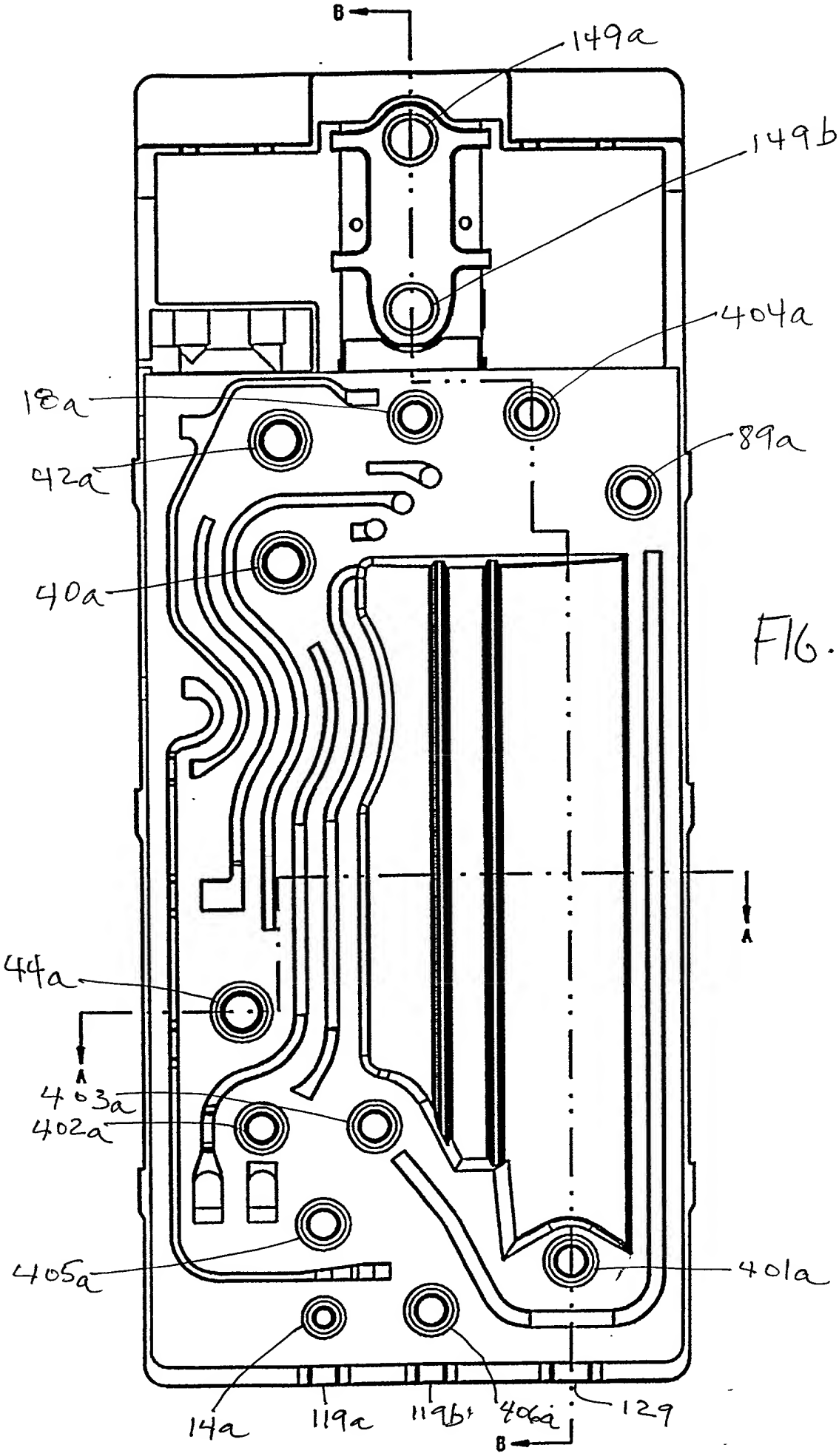

B
149a
149b
404a
18a
89a
42a
40a
A
44a
A
403a
402a
405a
401a
14a
119a
119b
406a
129
B

FIG. 19A

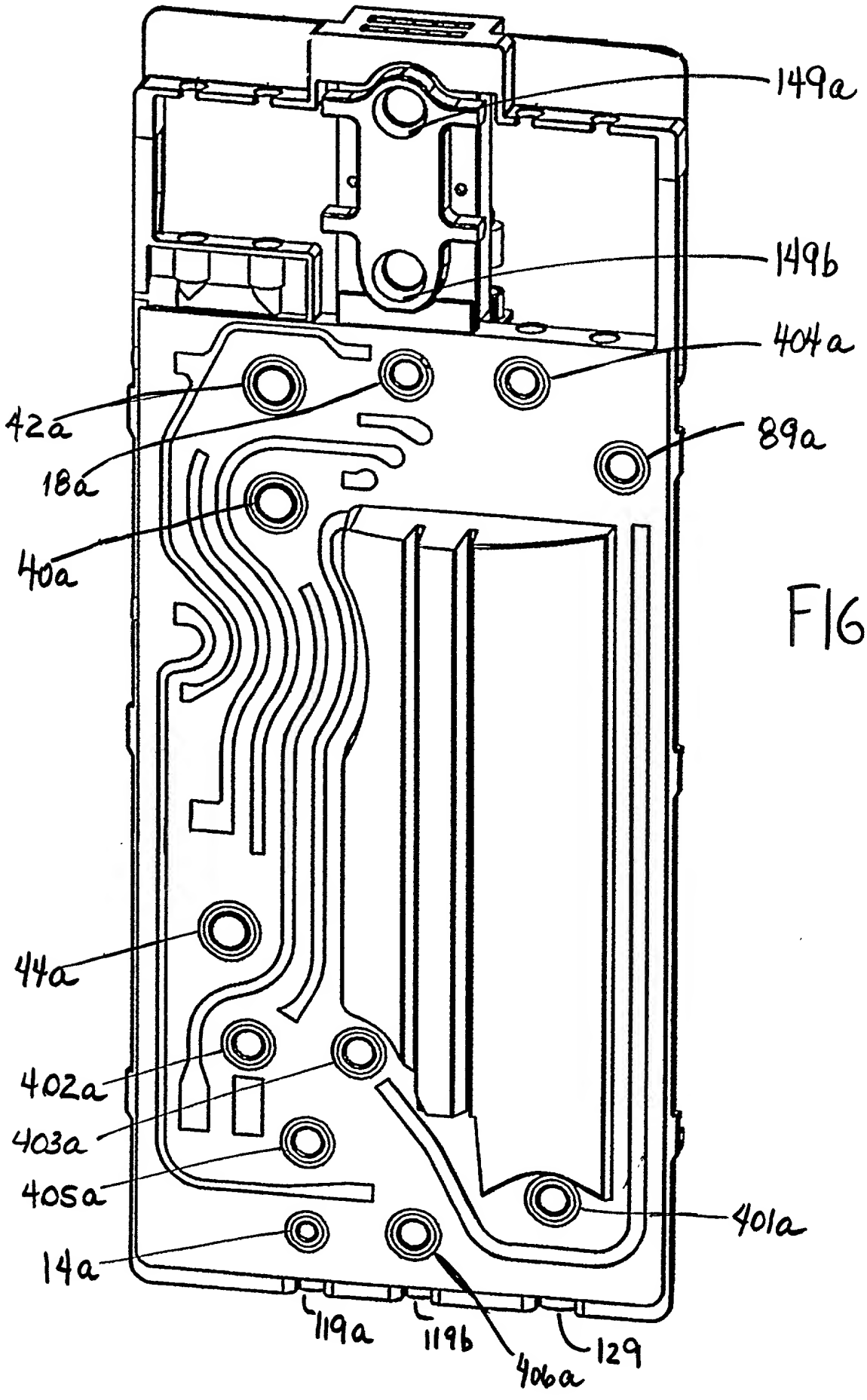

149a
149b
404a
42a
18a
89a
40a
44a
402a
403a
405a
401a
14a
119a
119b
129
406a

FIG. 19B

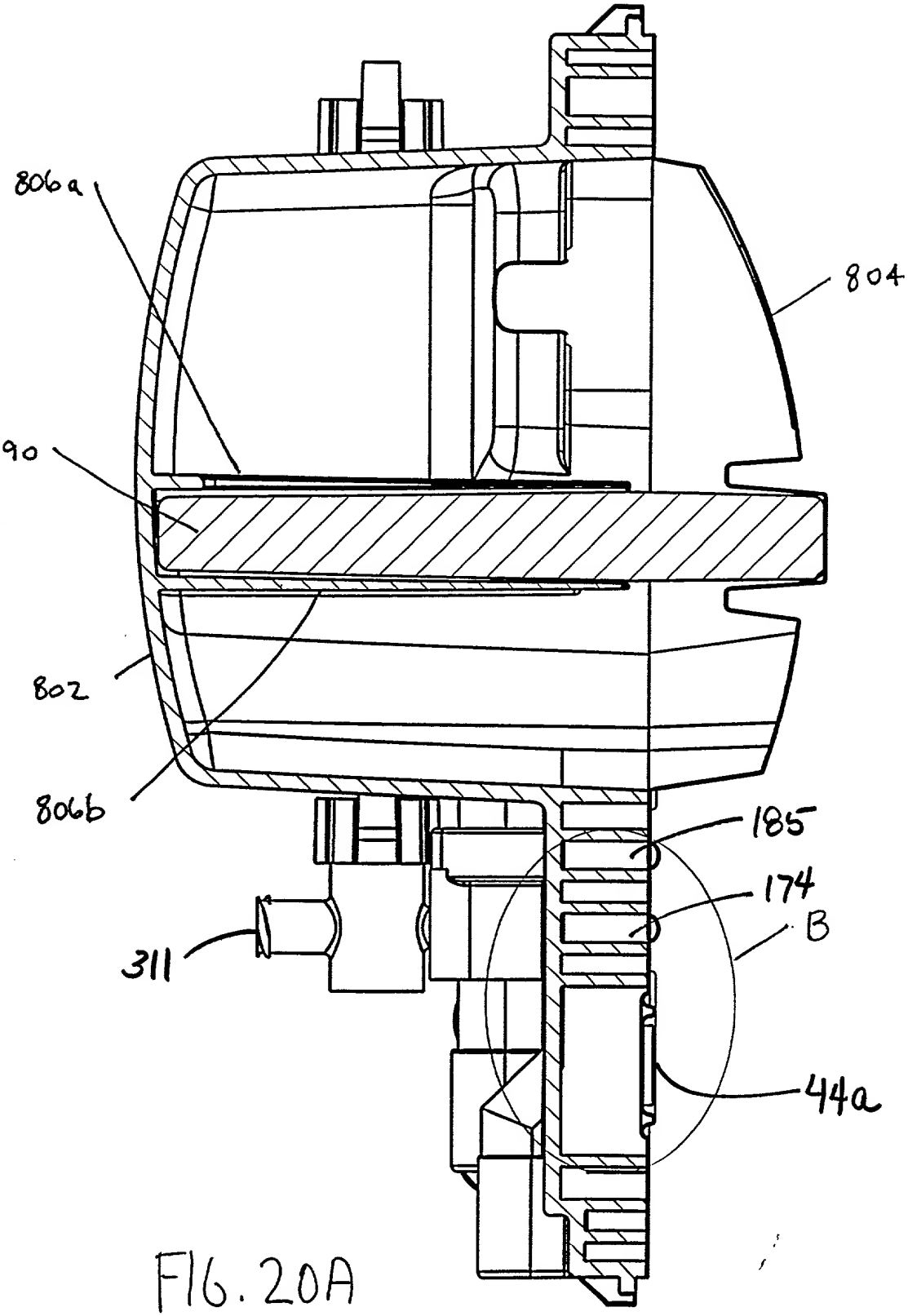


FIG. 20A

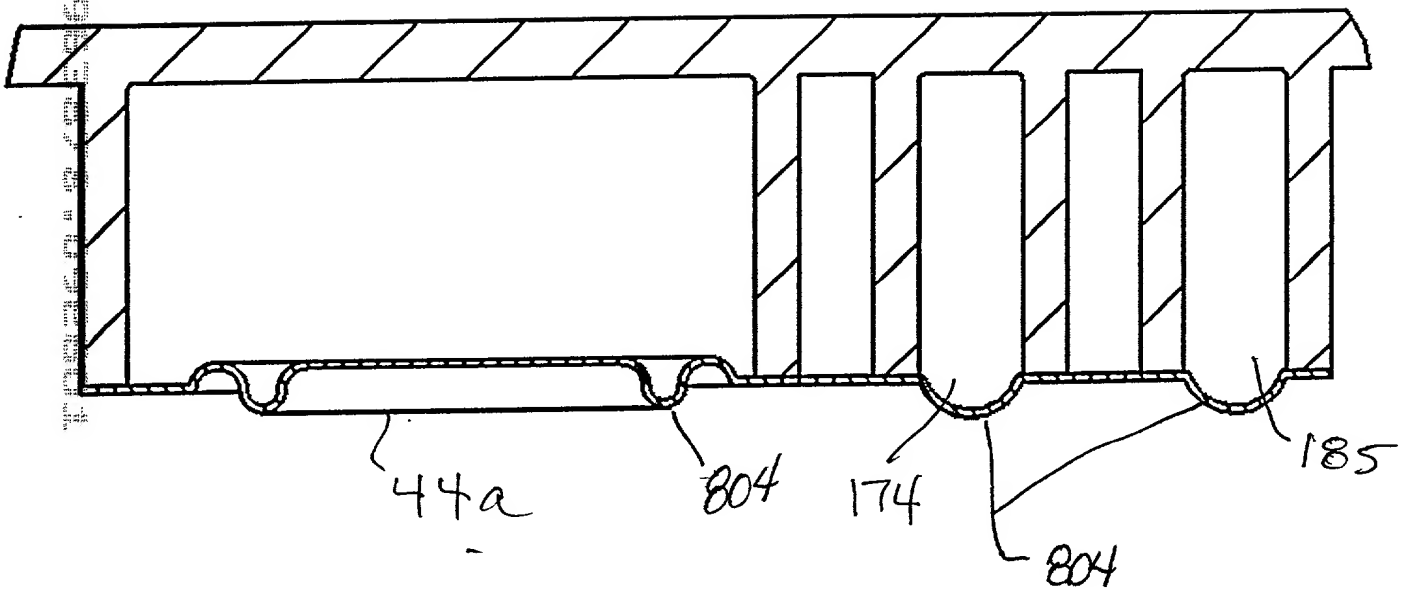


FIG. 20B

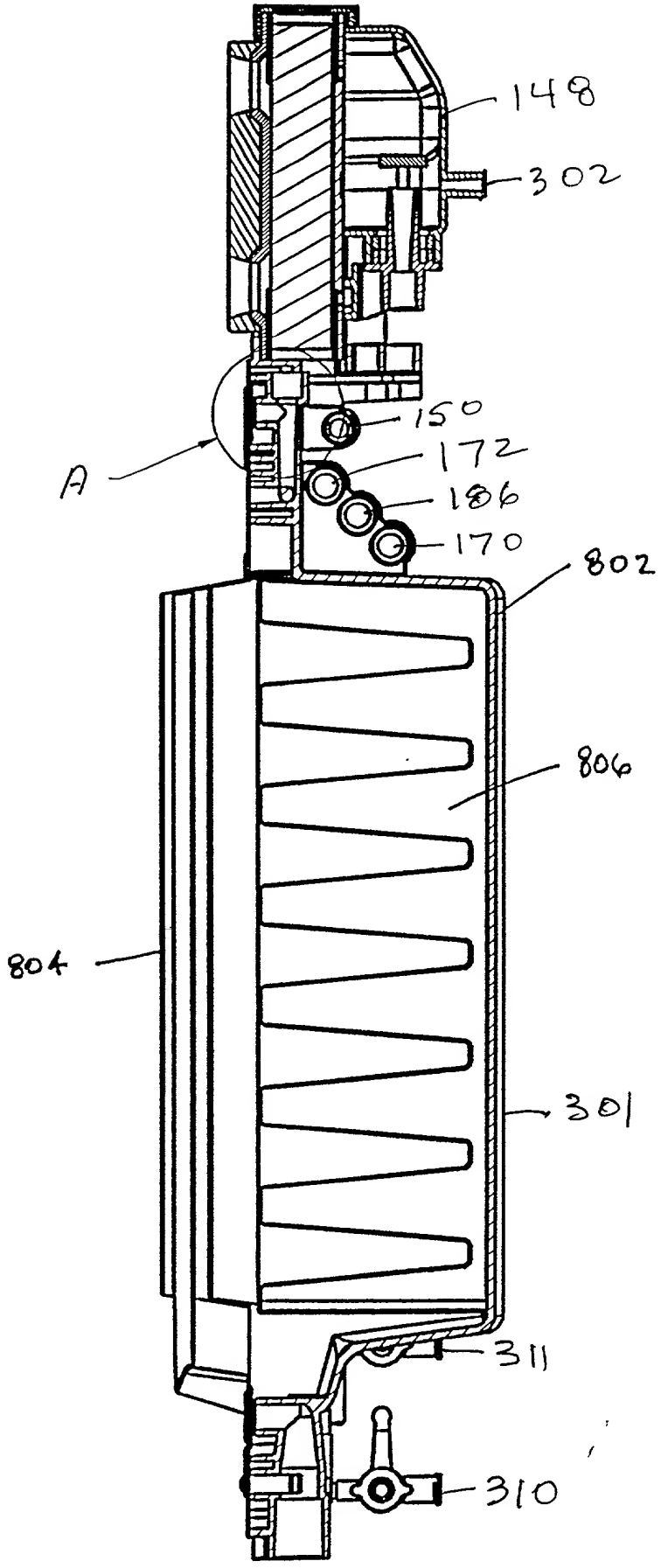


FIG. 21

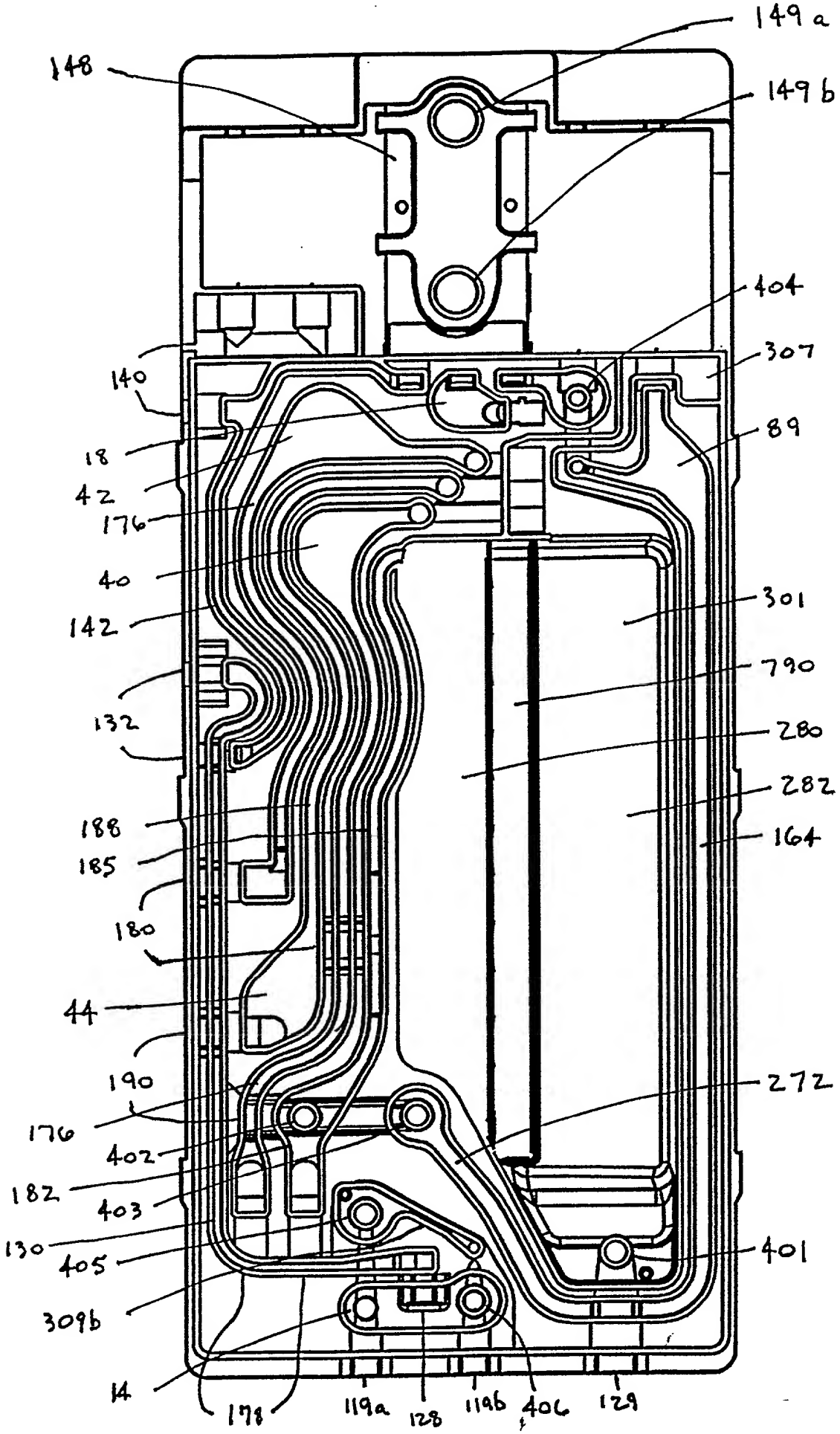

149a
148
149b
404
307
140
89
18
42
176
40
301
142
790
132
280
282
188
164
185
180
44
190
272
176
402
182
403
130
405
401
309b
14
178
119a
128
119b
406
129

FIG. 22

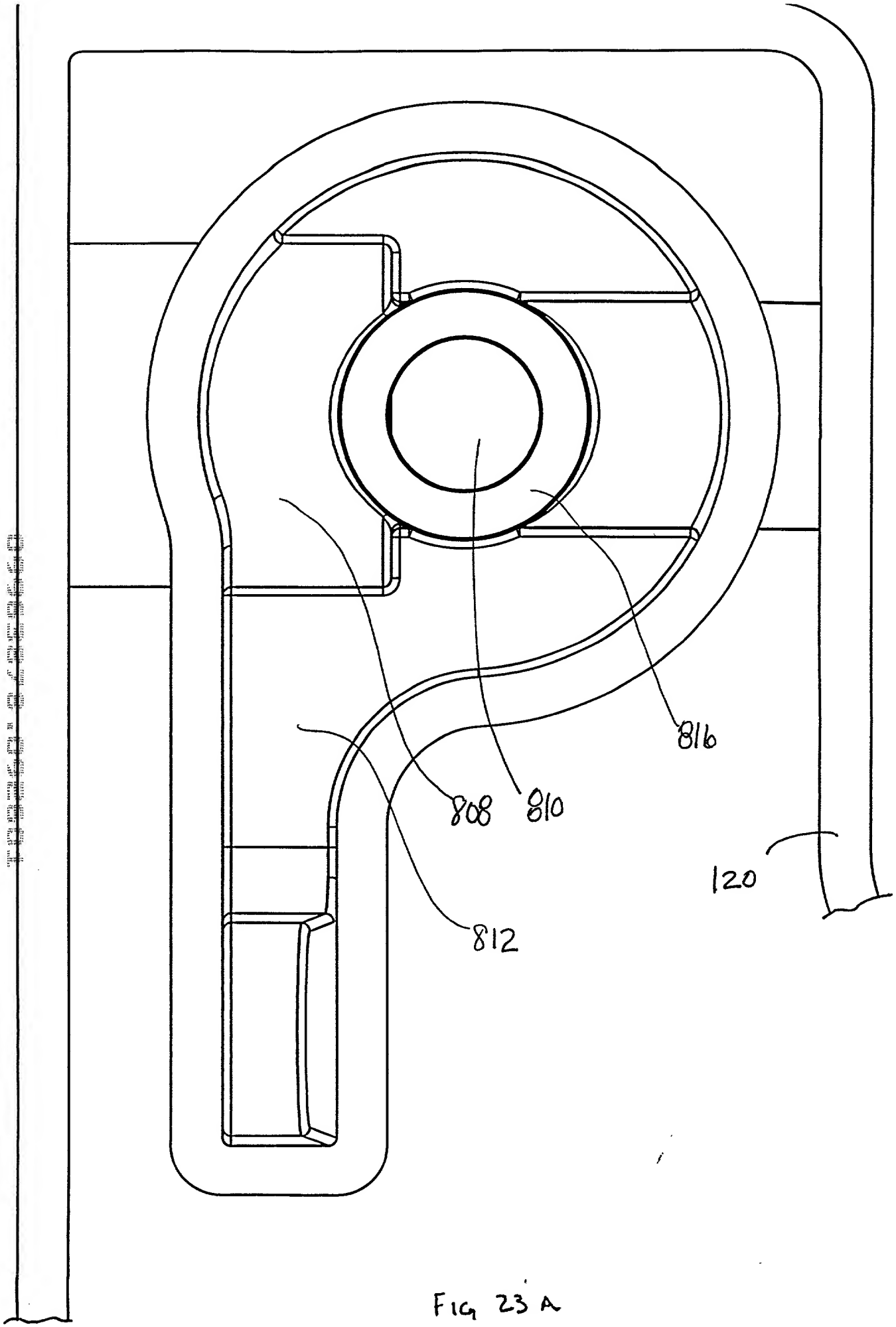


FIG 23A

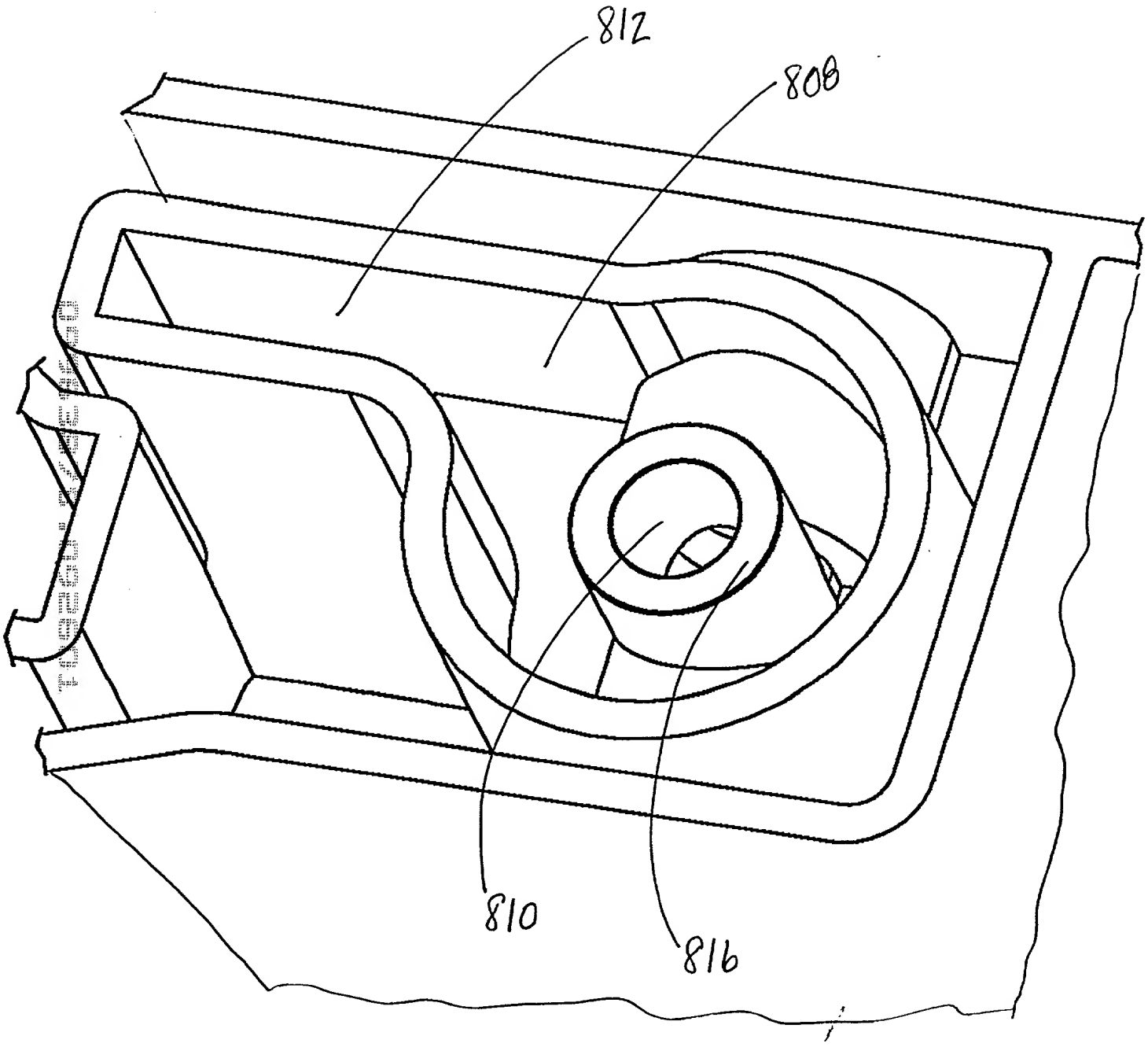


Fig. 23B

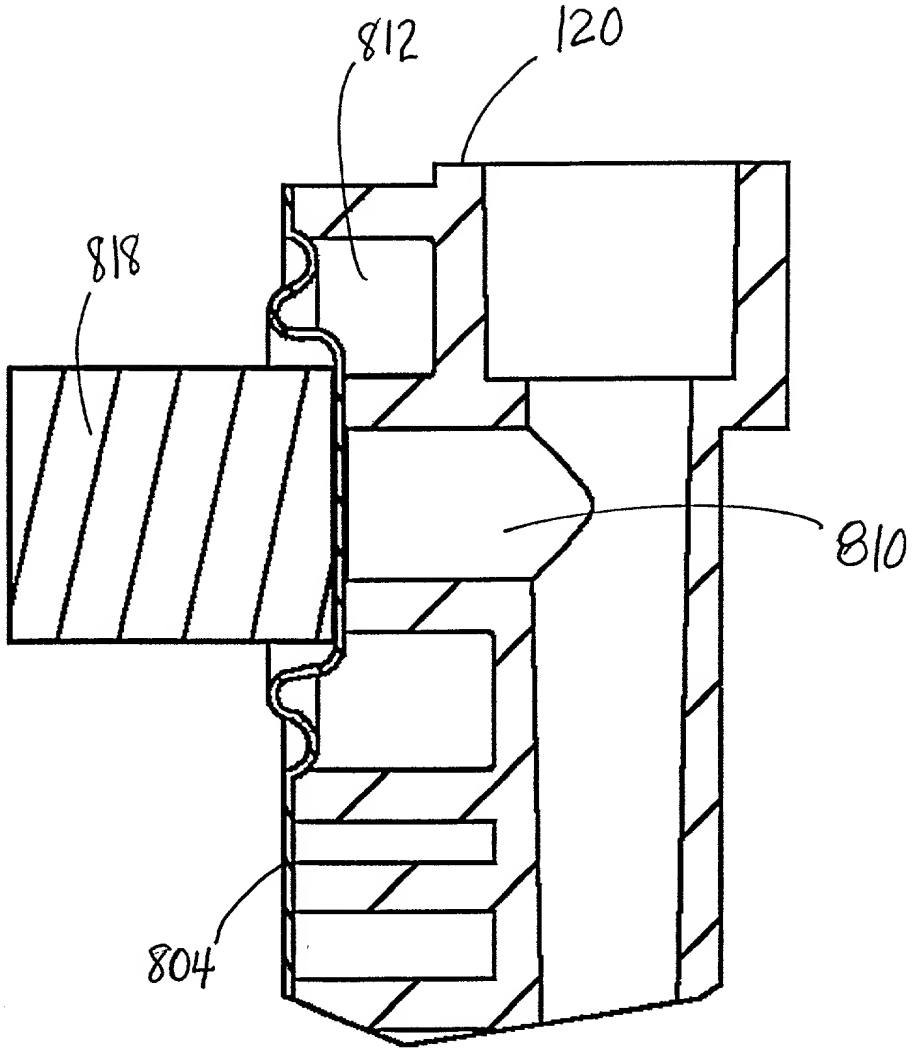


FIG 24A

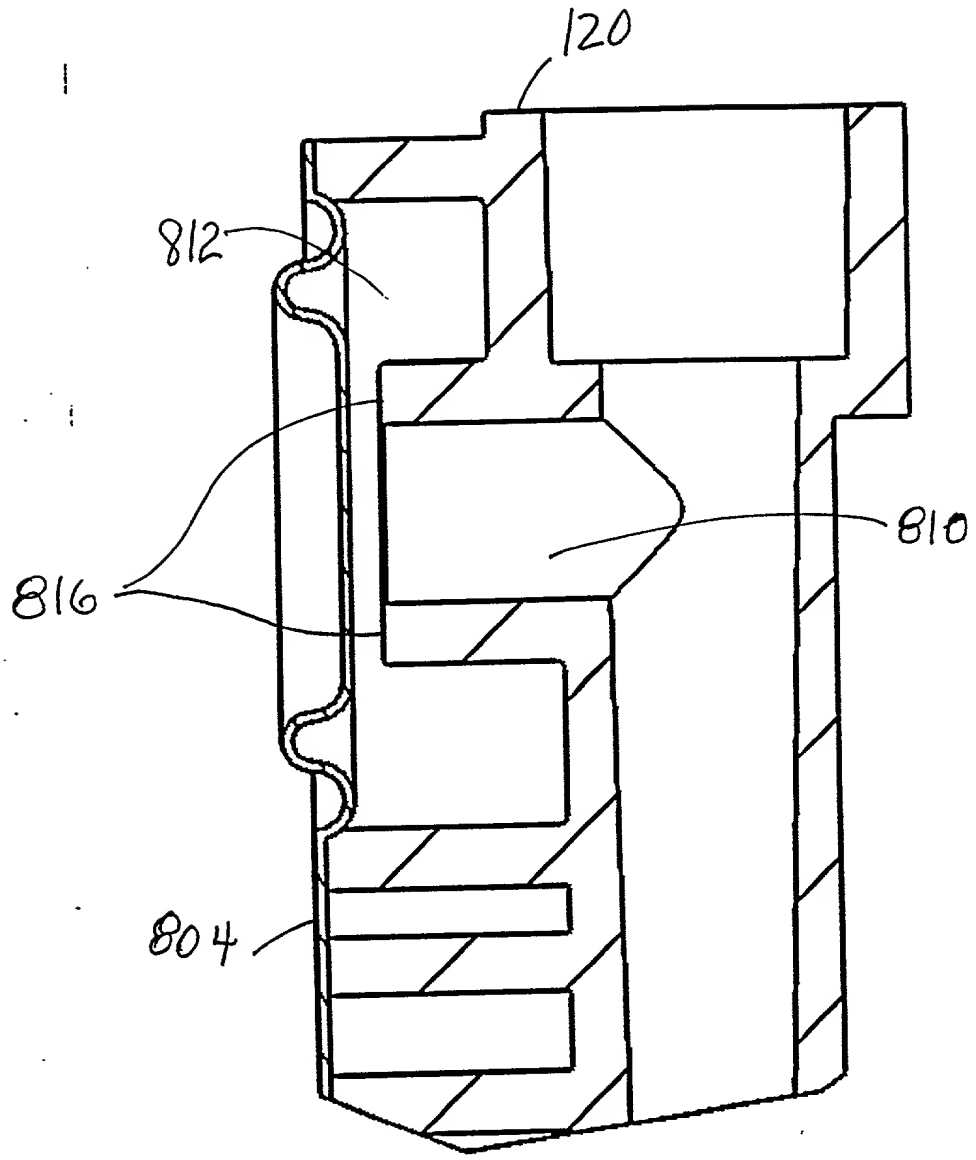


FIG 24B

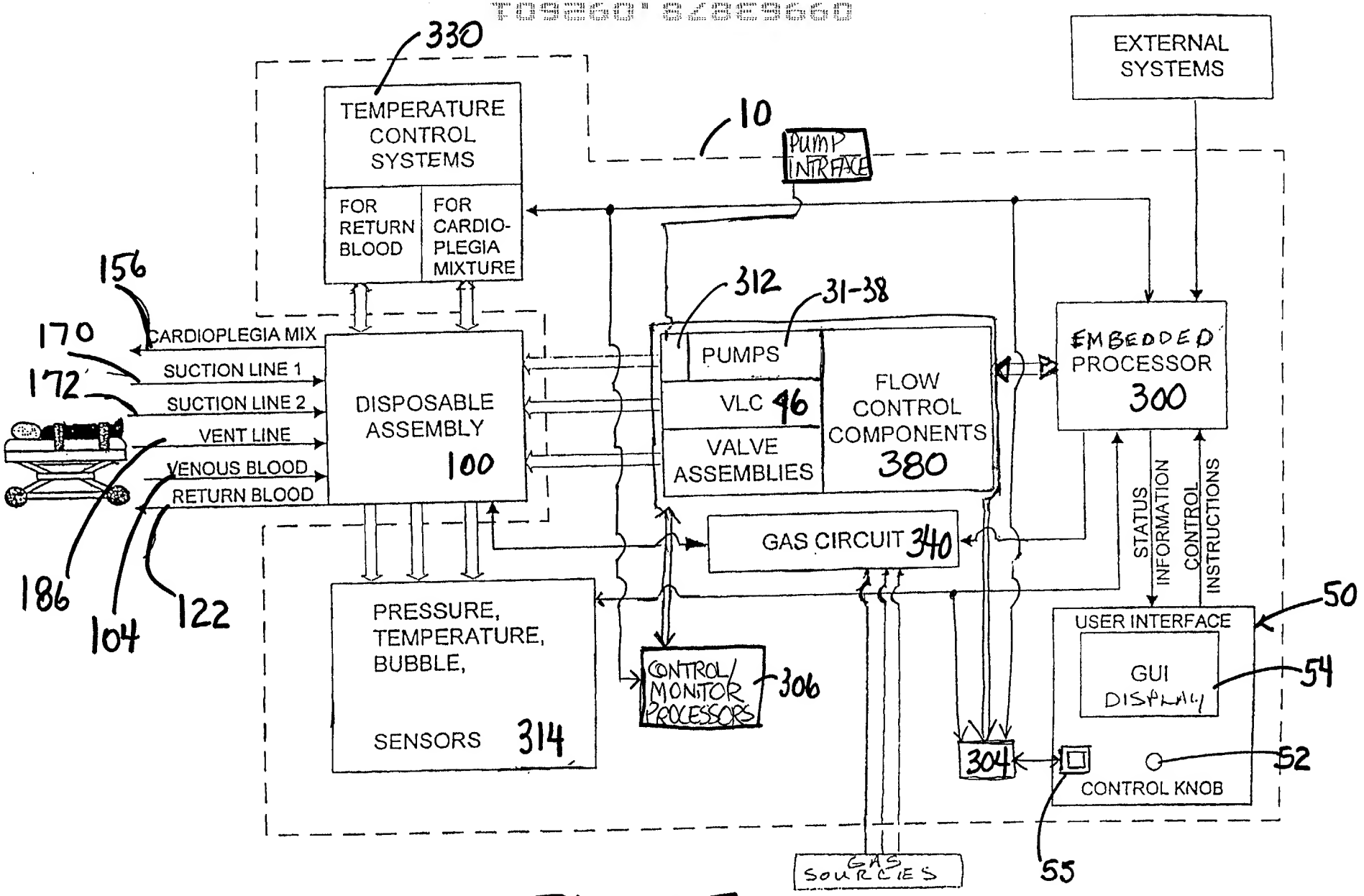

330
TEMPERATURE CONTROL SYSTEMS
FOR RETURN BLOOD
FOR CARDIO-PLEGIA MIXTURE
10
EXTERNAL SYSTEMS
PUMP INTERFACE
156
170
172
CARDIOPLEGIA MIX
SUCTION LINE 1
SUCTION LINE 2
VENT LINE
VENOUS BLOOD
RETURN BLOOD
DISPOSABLE ASSEMBLY 100
312
31-38
PUMPS
VLC 46
VALVE ASSEMBLIES
FLOW CONTROL COMPONENTS 380
EMBEDDED PROCESSOR 300
GAS CIRCUIT 340
STATUS INFORMATION
CONTROL INSTRUCTIONS
186
104
122
PRESSURE, TEMPERATURE, BUBBLE, SENSORS 314
CONTROL/ MONITOR PROCESSORS 306
50
USER INTERFACE
GUI DISPLAY
54
304
52
CONTROL KNOB
55
GAS SOURCES

FIG. 25

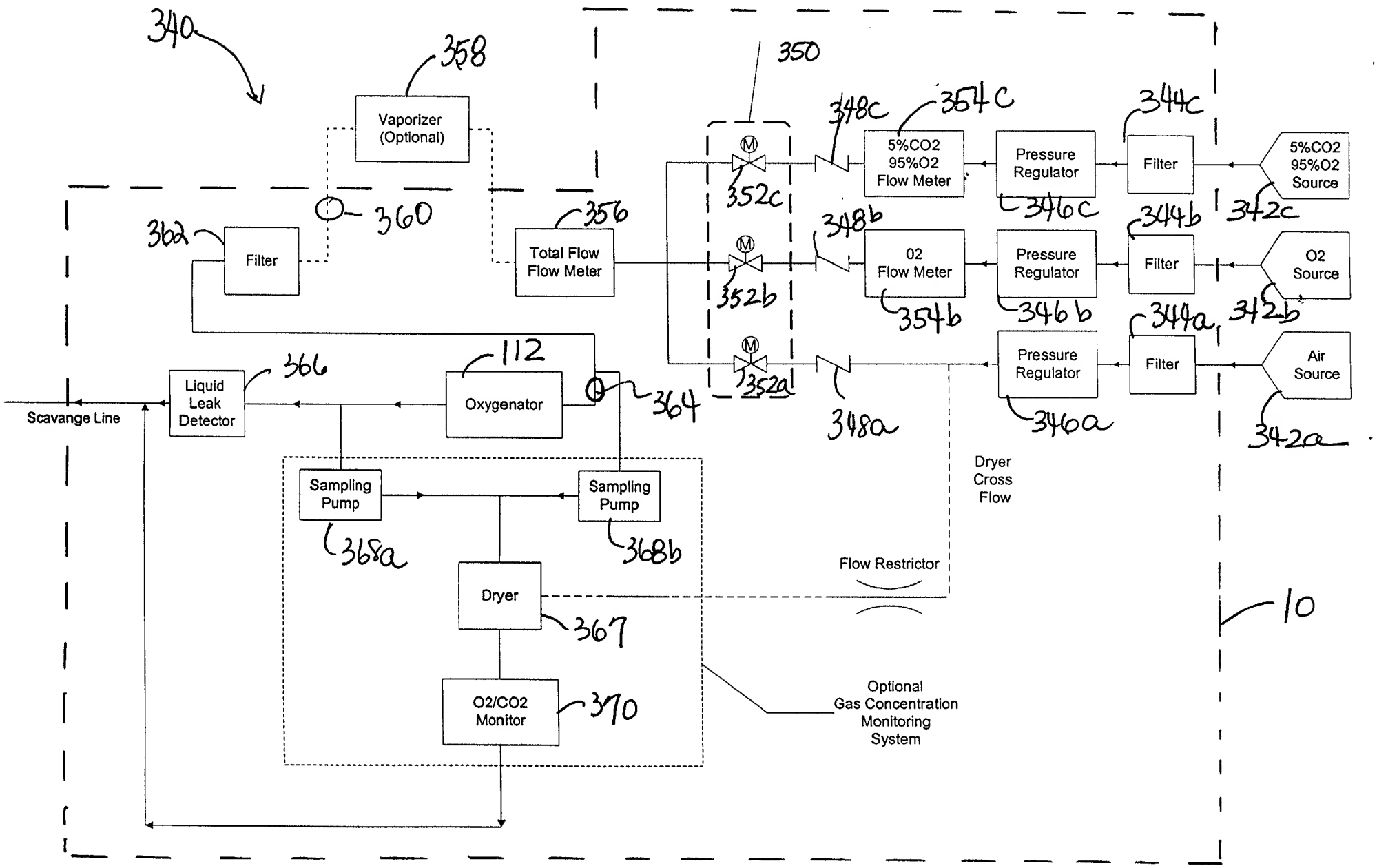

340
358
Vaporizer (Optional)
350
360
362
Filter
356
Total Flow Flow Meter
352c
352b
352a
348c
348b
348a
354c
5%CO2 95%O2 Flow Meter
354b
02 Flow Meter
346c
346b
346a
Pressure Regulator
344c
344b
344a
Filter
342c
5%CO2 95%O2 Source
342b
O2 Source
342a
Air Source
112
Oxygenator
366
Liquid Leak Detector
364
Scavange Line
Sampling Pump
368a
Sampling Pump
368b
Dryer
367
O2/CO2 Monitor
370
Dryer Cross Flow
Flow Restrictor
Optional Gas Concentration Monitoring System
10

FIG. 26

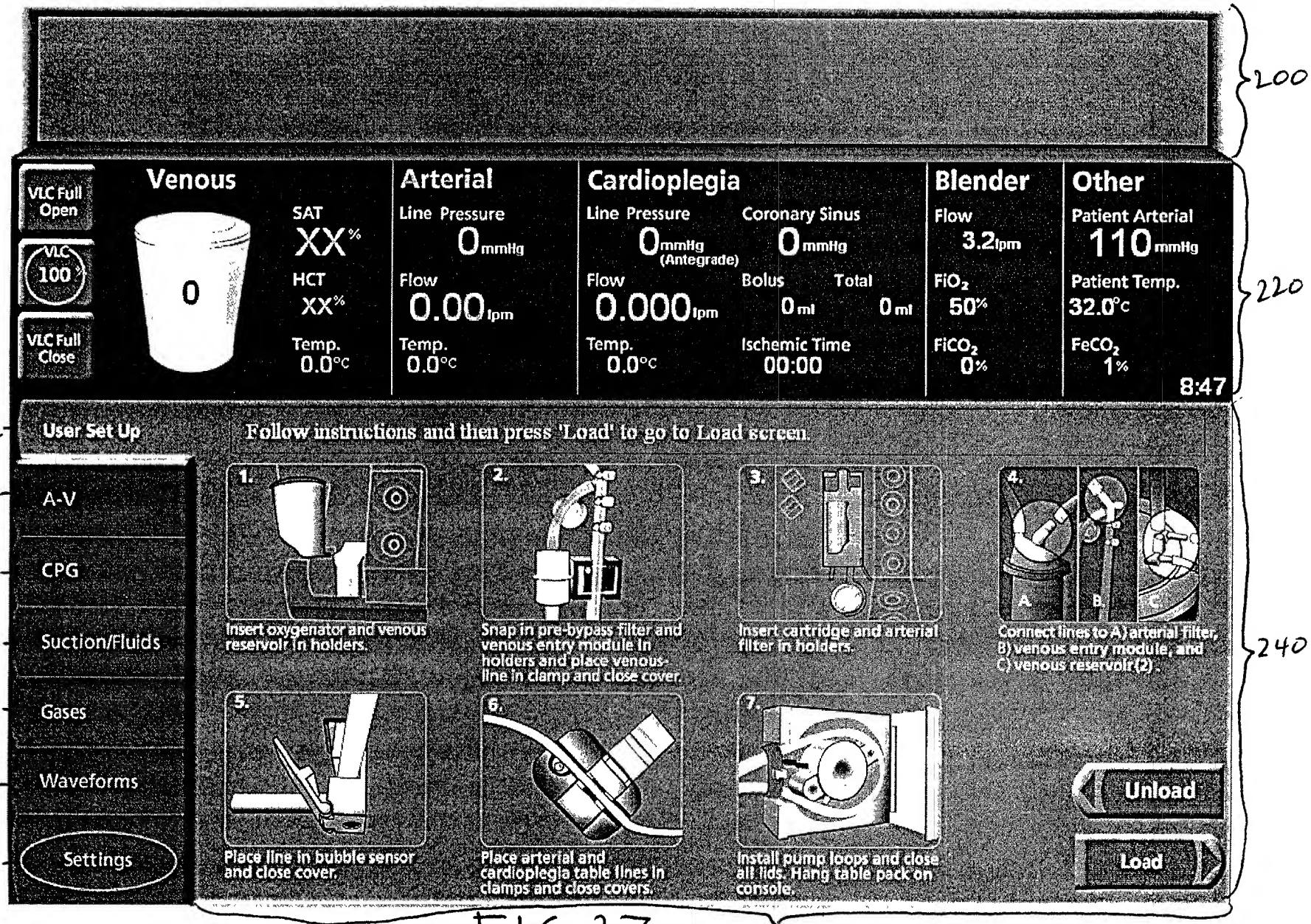

200
VLC Full Open
VLC 100 %
VLC Full Close
Venous
0
SAT XX%
HCT XX%
Temp. 0.0°C
Arterial
Line Pressure 0 mmHg
Flow 0.00 lpm
Temp. 0.0°C
Cardioplegia
Line Pressure 0 mmHg (Antegrade)
Coronary Sinus 0 mmHg
Flow 0.000 lpm
Bolus 0 ml
Total 0 ml
Temp. 0.0°C
Ischemic Time 00:00
Blender
Flow 3.2 lpm
FiO2 50%
FiCO2 0%
Other
Patient Arterial 110 mmHg
Patient Temp. 32.0°C
FeCO2 1%
8:47
220
242 User Set Up
Follow instructions and then press 'Load' to go to Load screen.
244 A-V
246 CPG
248 Suction/Fluids
250 Gases
252 Waveforms
254 Settings
1. Insert oxygenator and venous reservoir in holders.
2. Snap in pre-bypass filter and venous entry module in holders and place venous-line in clamp and close cover.
3. Insert cartridge and arterial filter in holders.
4. Connect lines to A) arterial filter, B) venous entry module, and C) venous reservoir(2).
5. Place line in bubble sensor and close cover.
6. Place arterial and cardioplegia table lines in clamps and close covers.
7. Install pump loops and close all lids. Hang table pack on console.
Unload
Load
240
243

FIG. 27

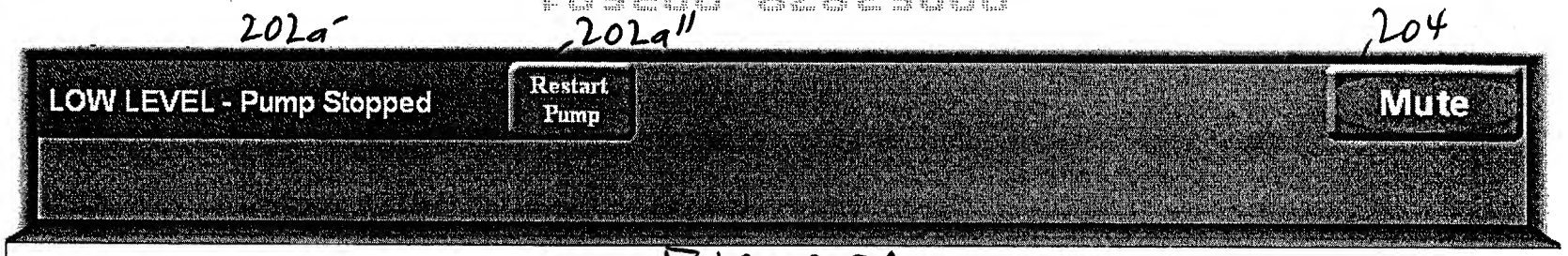


FIG. 28A

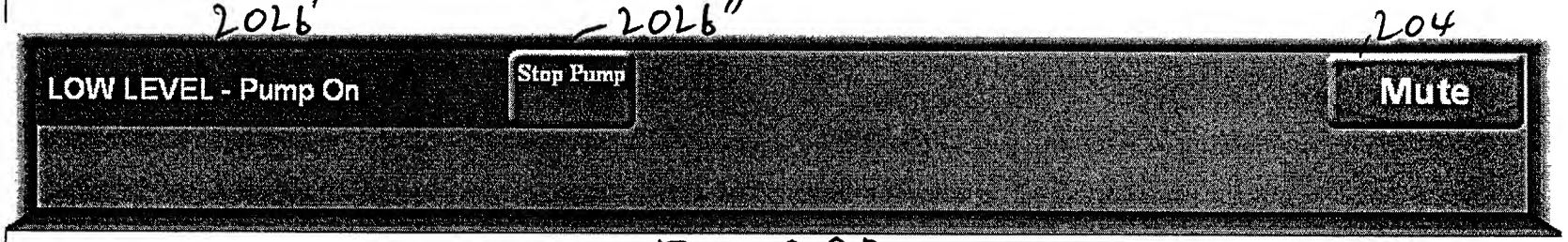


FIG. 28B

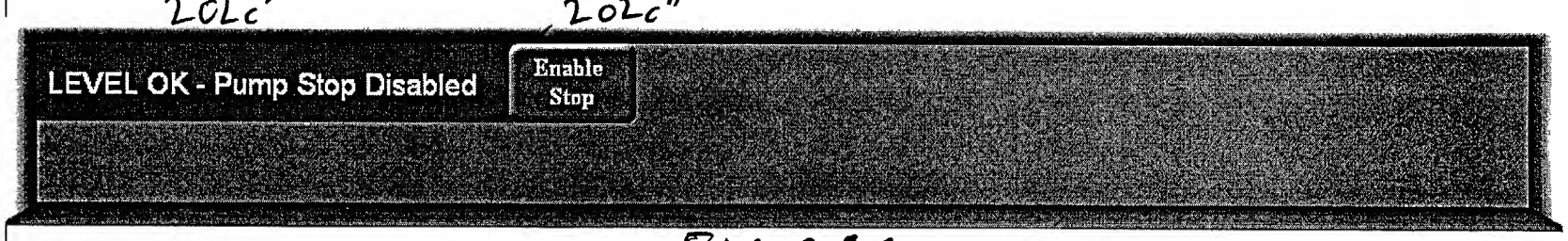


FIG. 28C

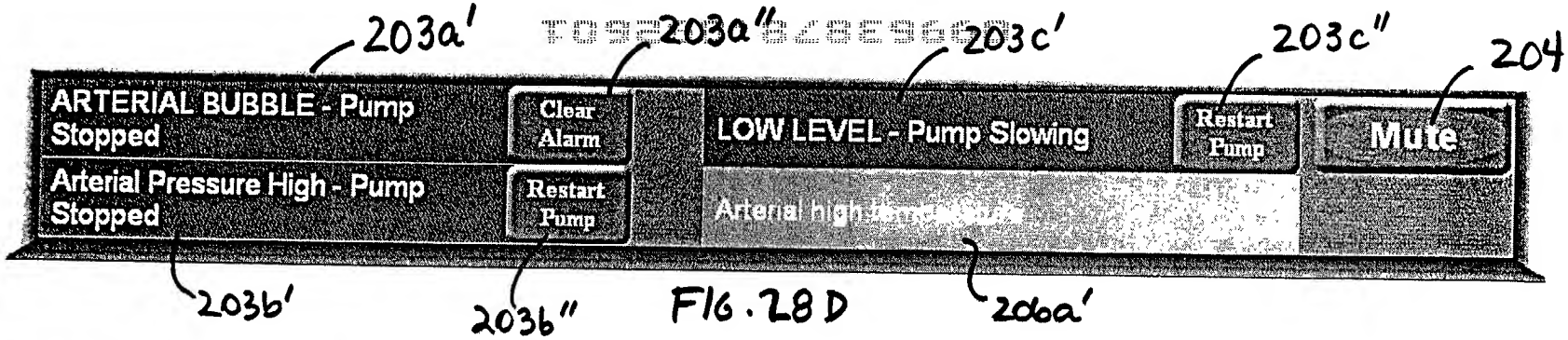


FIG. 28D

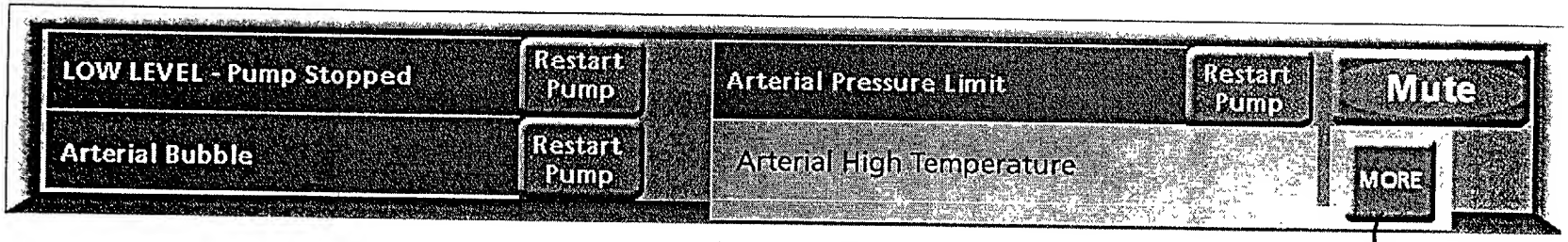


FIG. 28E

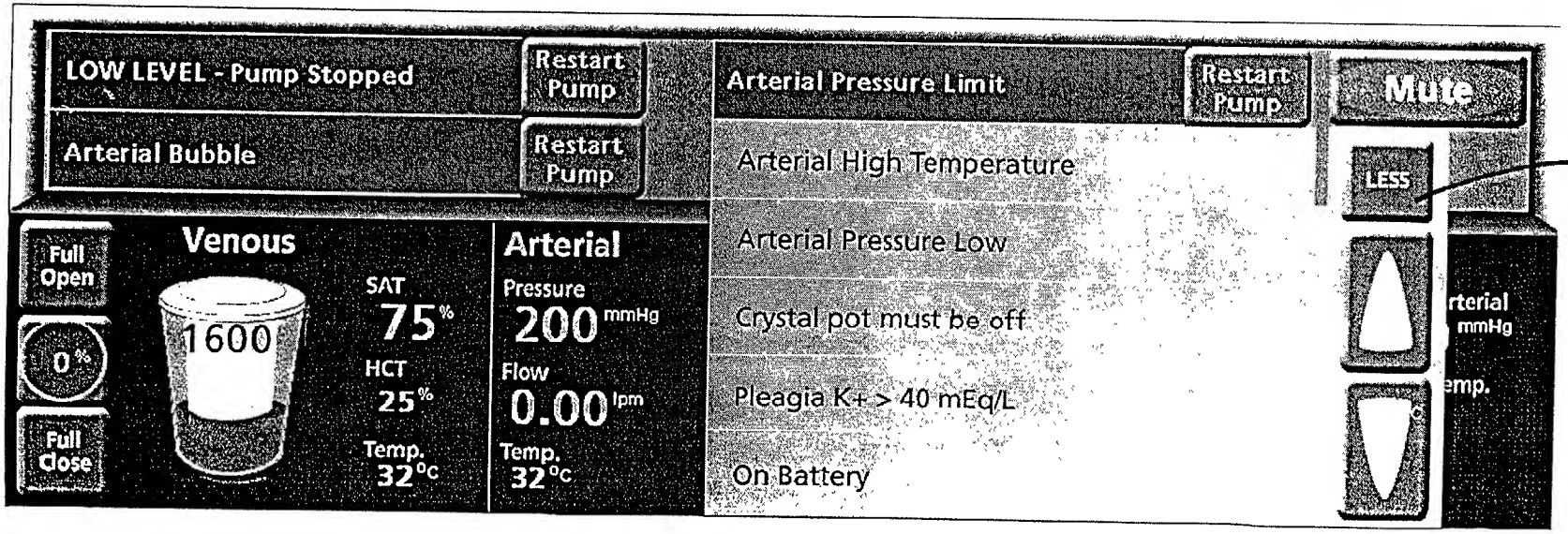


FIG. 28F

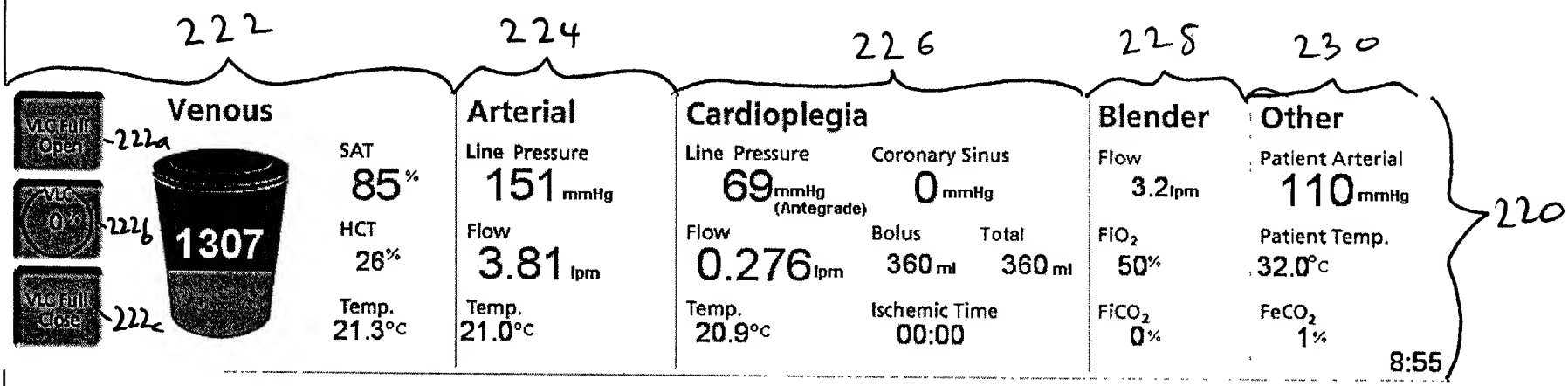

222
224
226
228
230
220
Venous
VLC Full Open
222a
VLC 0%
222b
1307
VLC Full Close
222c
SAT
85%
HCT
26%
Temp.
21.3°C
Arterial
Line Pressure
151 mmHg
Flow
3.81 lpm
Temp.
21.0°C
Cardioplegia
Line Pressure
69 mmHg (Antegrade)
Coronary Sinus
0 mmHg
Flow
0.276 lpm
Bolus
360 ml
Total
360 ml
Temp.
20.9°C
Ischemic Time
00:00
Blender
Flow
3.2 lpm
FiO2
50%
FiCO2
0%
Other
Patient Arterial
110 mmHg
Patient Temp.
32.0°C
FeCO2
1%
8:55

FIG. 29

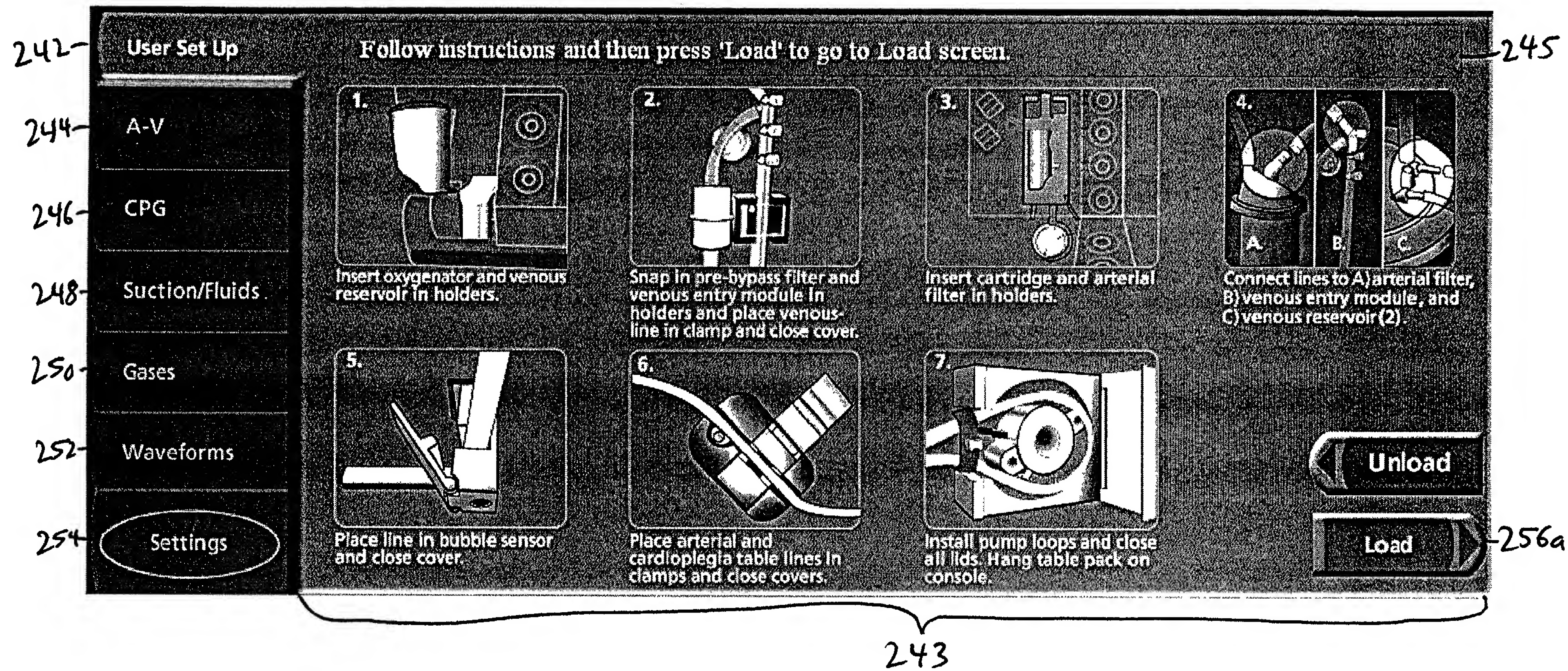

242
User Set Up
Follow instructions and then press 'Load' to go to Load screen.
245
244
A-V
246
CPG
248
Suction/Fluids
250
Gases
252
Waveforms
254
Settings
1.
Insert oxygenator and venous reservoir in holders.
2.
Snap in pre-bypass filter and venous entry module in holders and place venous-line in clamp and close cover.
3.
Insert cartridge and arterial filter in holders.
4.
A.
B.
C.
Connect lines to A) arterial filter, B) venous entry module, and C) venous reservoir (2).
5.
Place line in bubble sensor and close cover.
6.
Place arterial and cardioplegia table lines in clamps and close covers.
7.
Install pump loops and close all lids. Hang table pack on console.
Unload
Load
256a
243

FIG. 30A

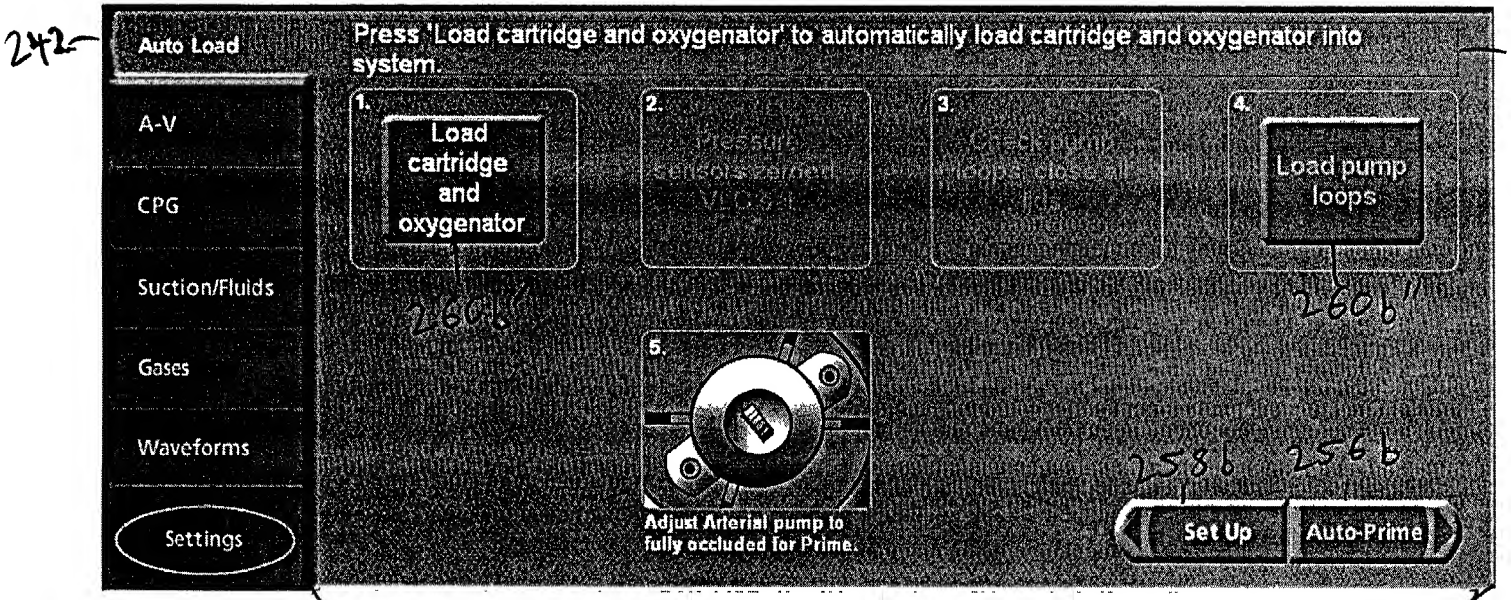


FIG. 30B

243

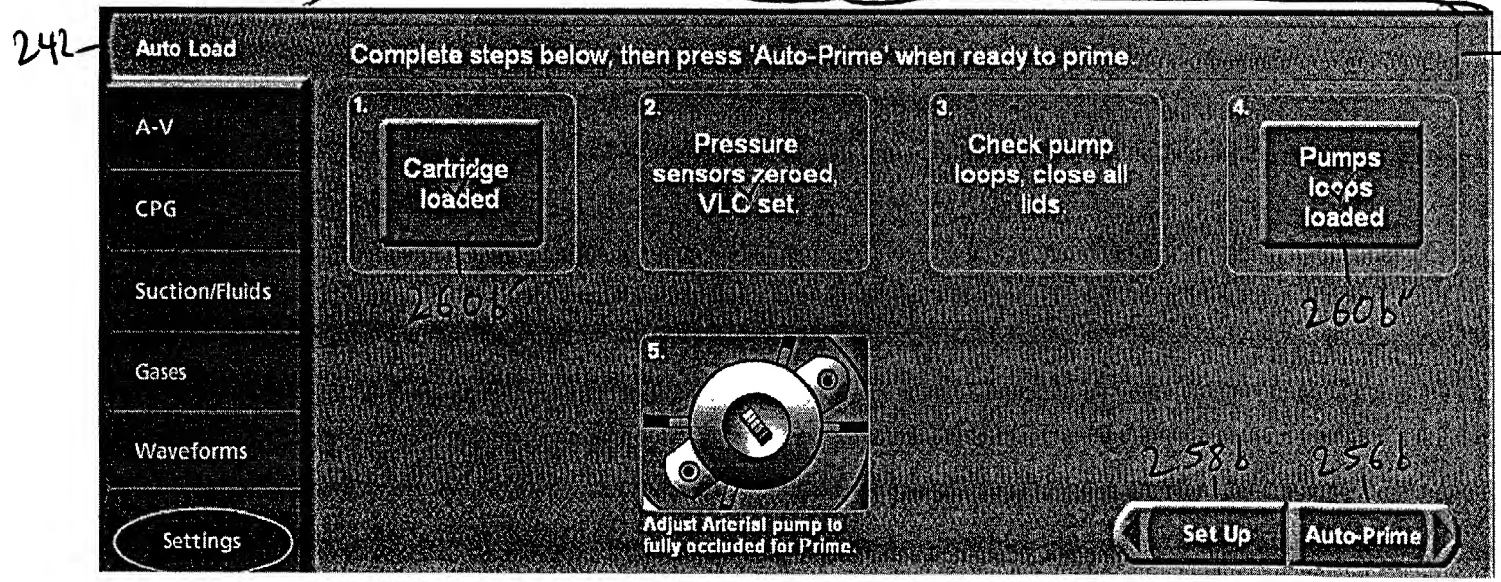


FIG 30C

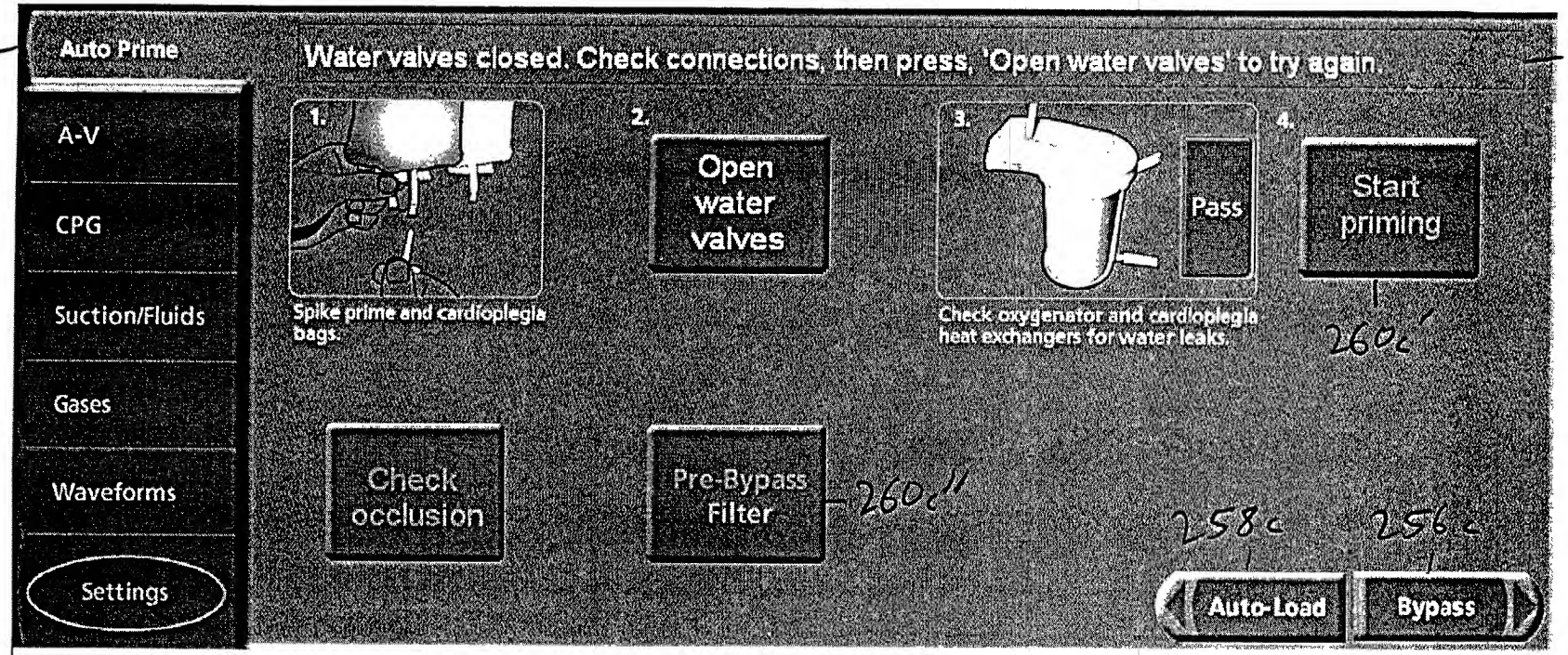


FIG. 30D

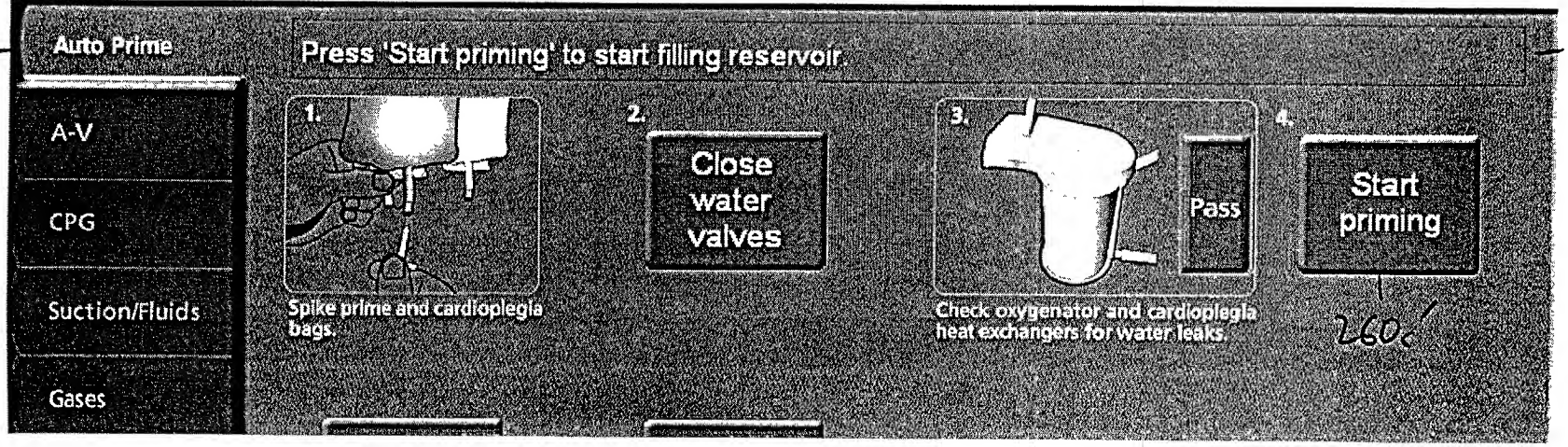


FIG 30E

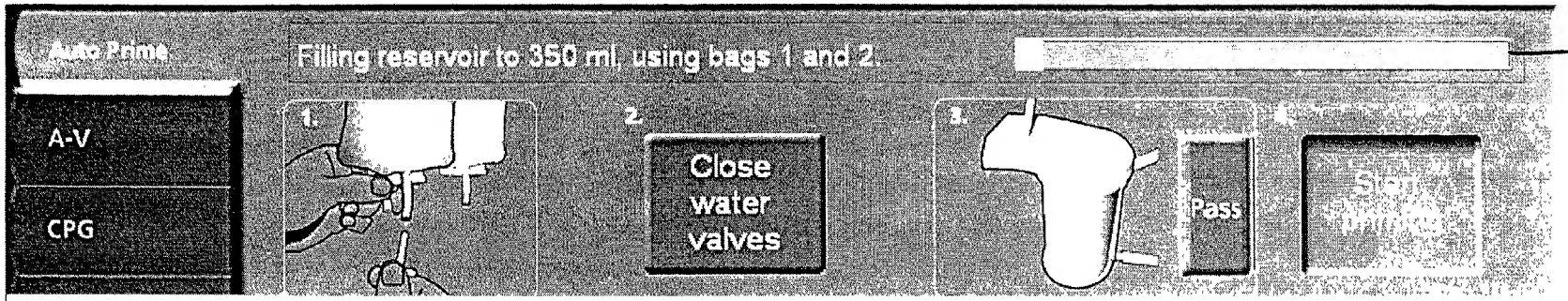


FIG. 30F

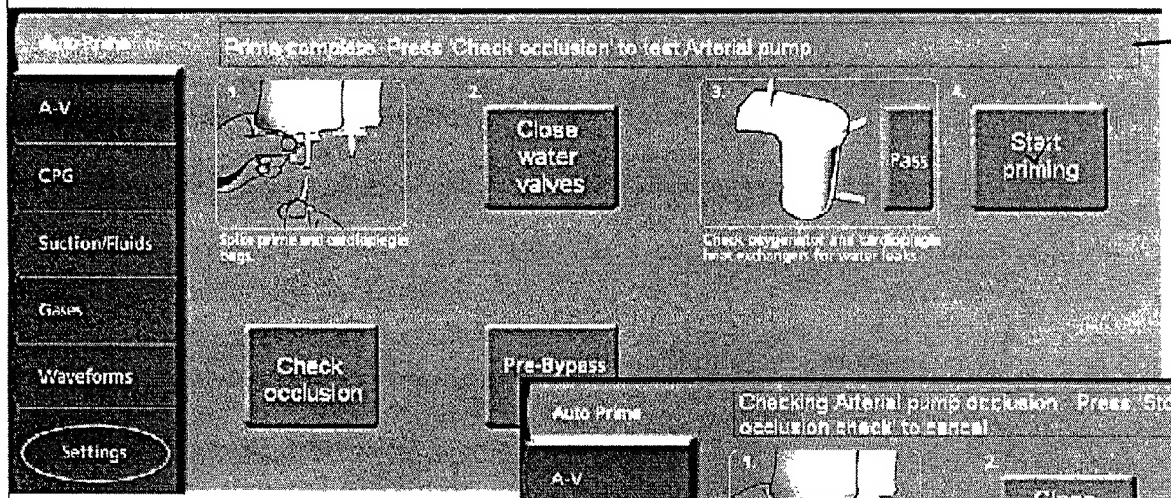


FIG. 30G

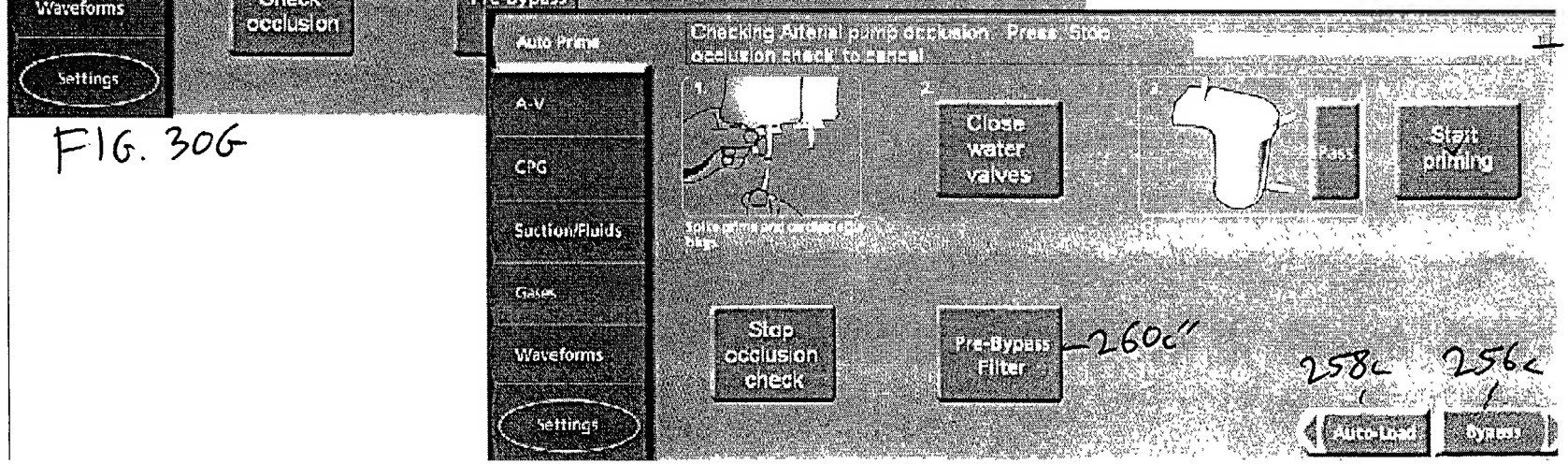


FIG. 30H

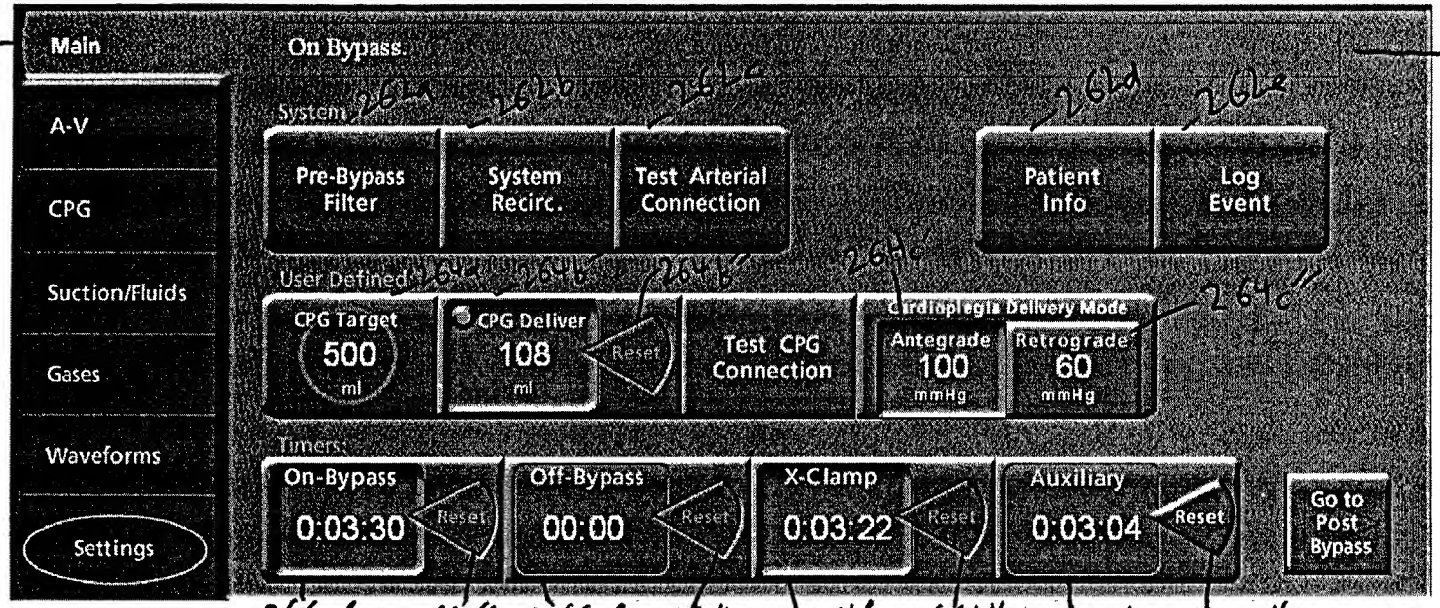


FIG. 30I

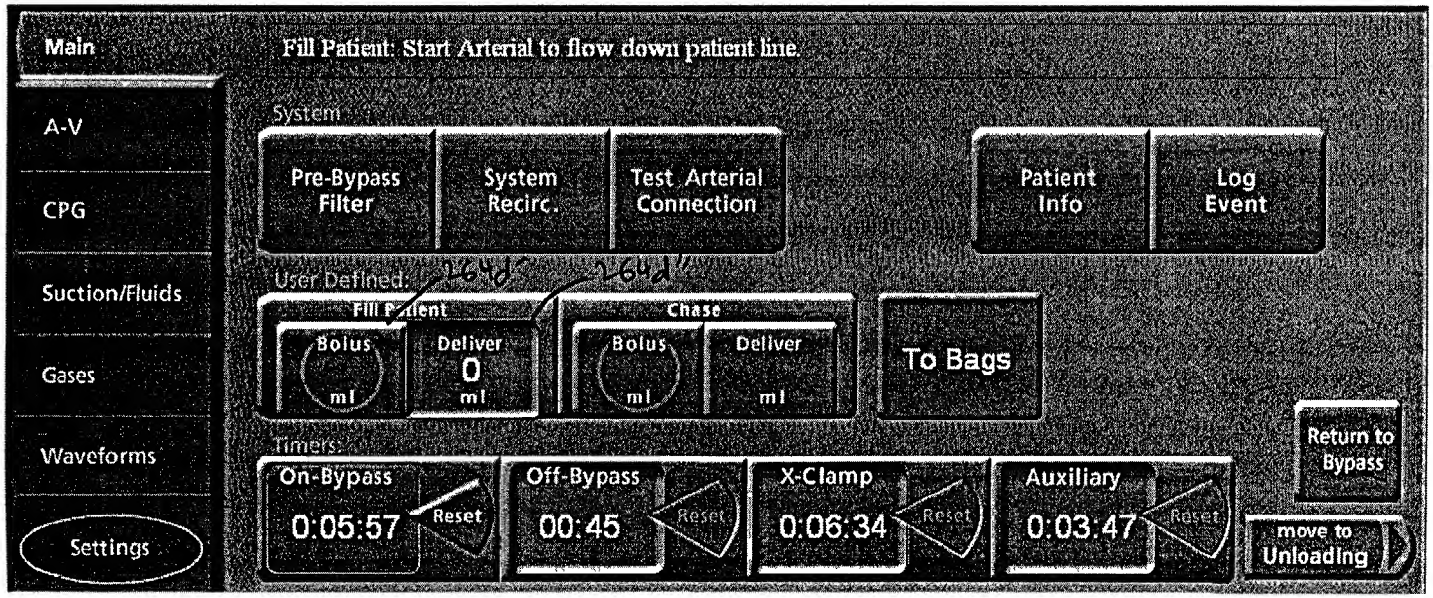


FIG. 30J

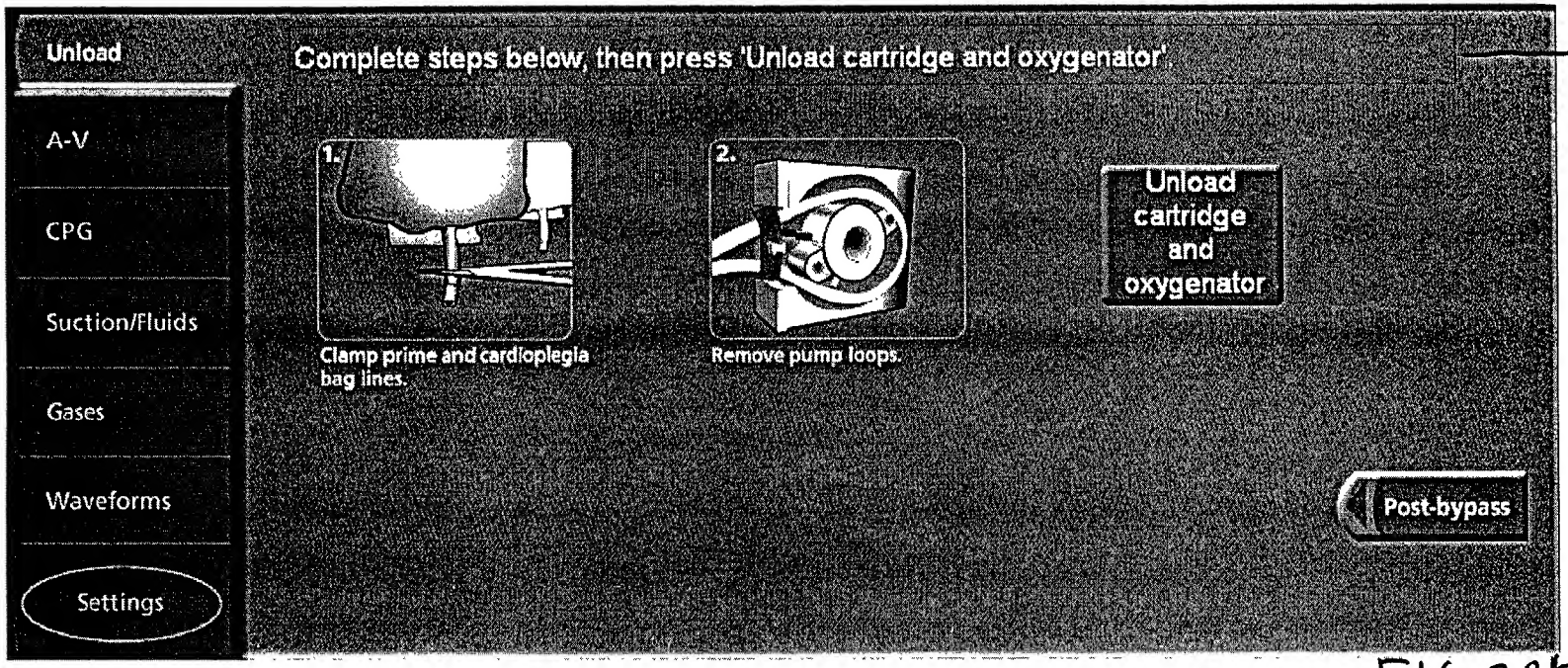


FIG. 30K

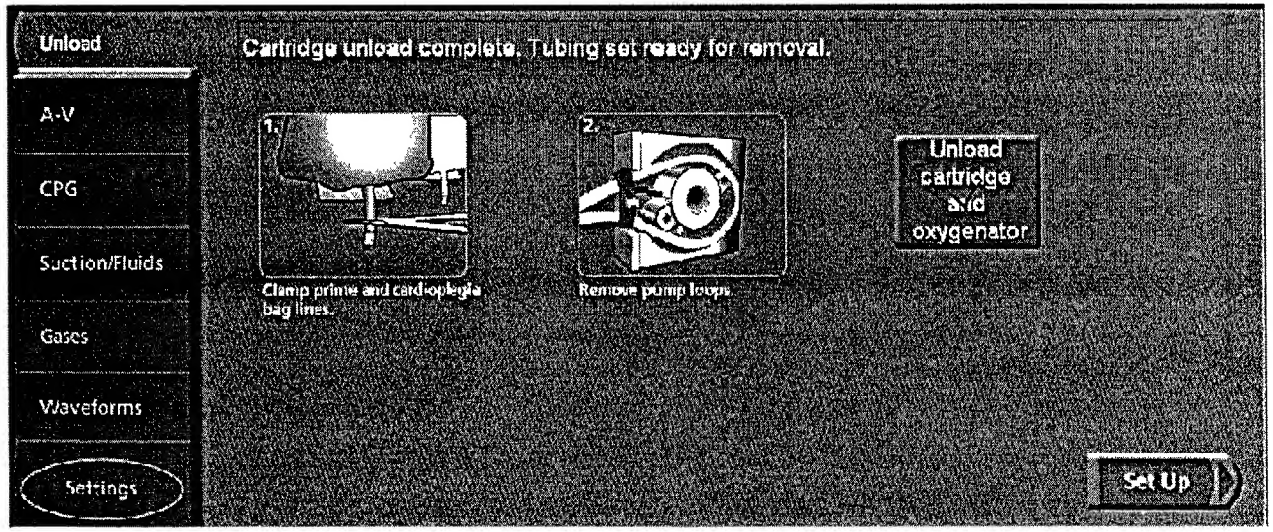


FIG. 30L

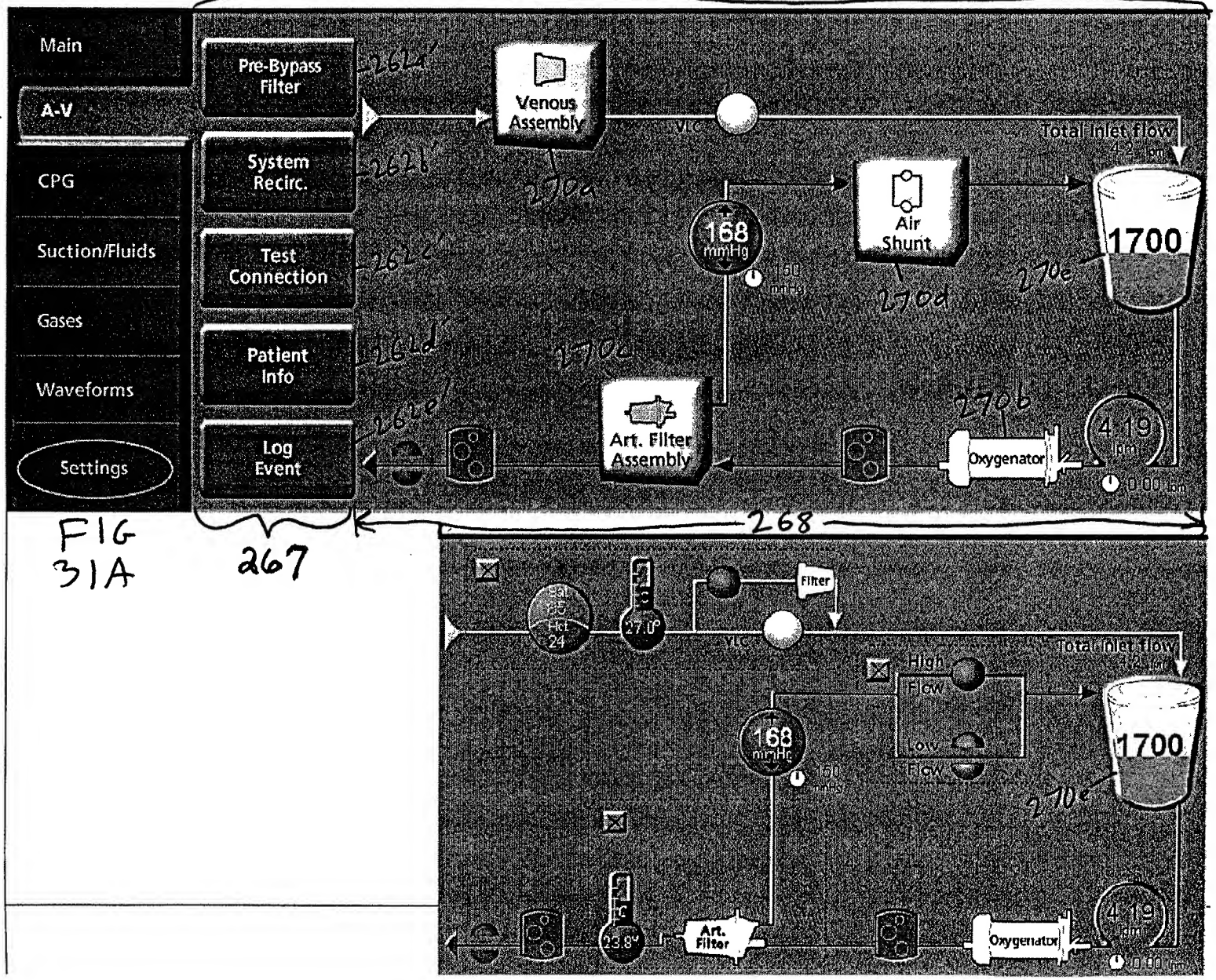


FIG 31A

FIG. 31B

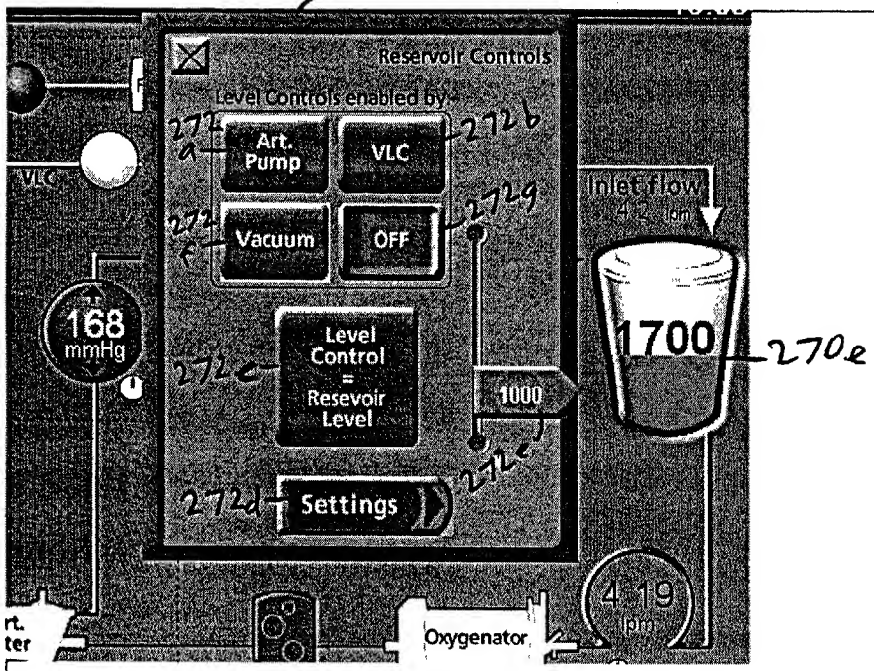


FIG. 31C

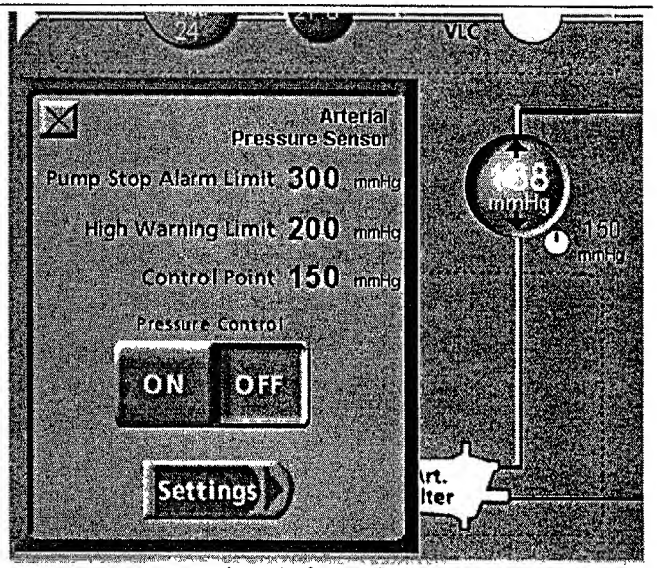


FIG. 31D

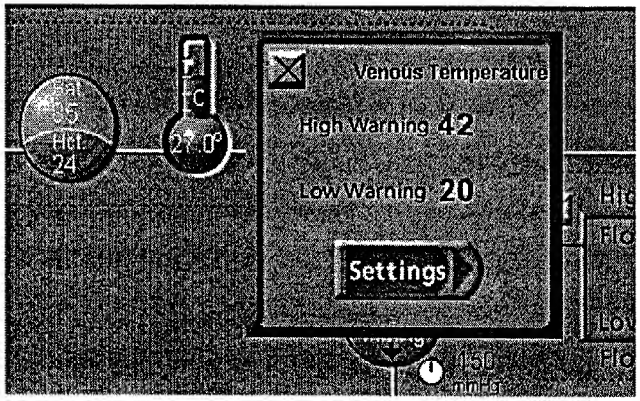


FIG. 31E

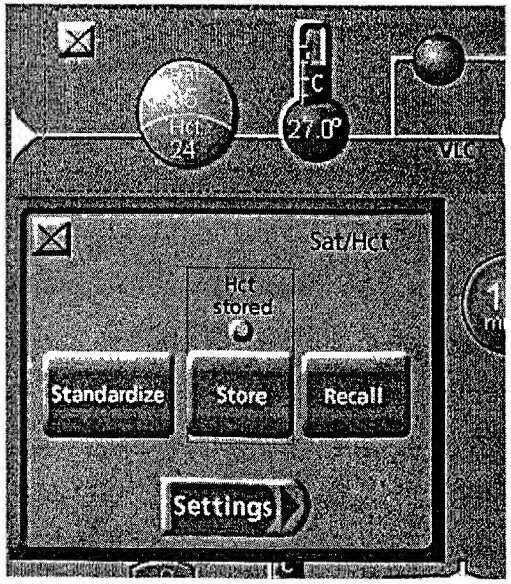


FIG. 31F

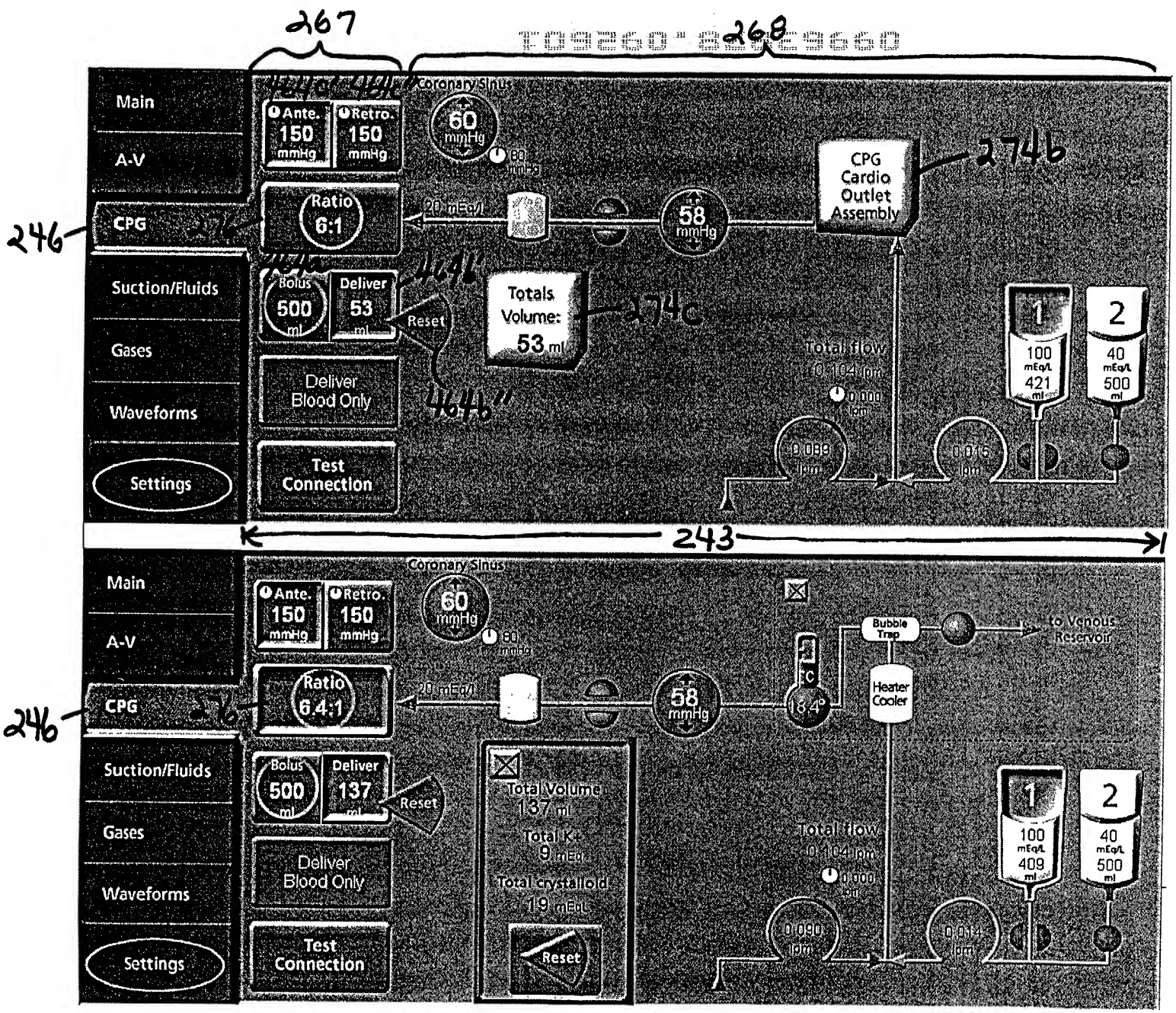


FIG. 32A

FIG. 32B

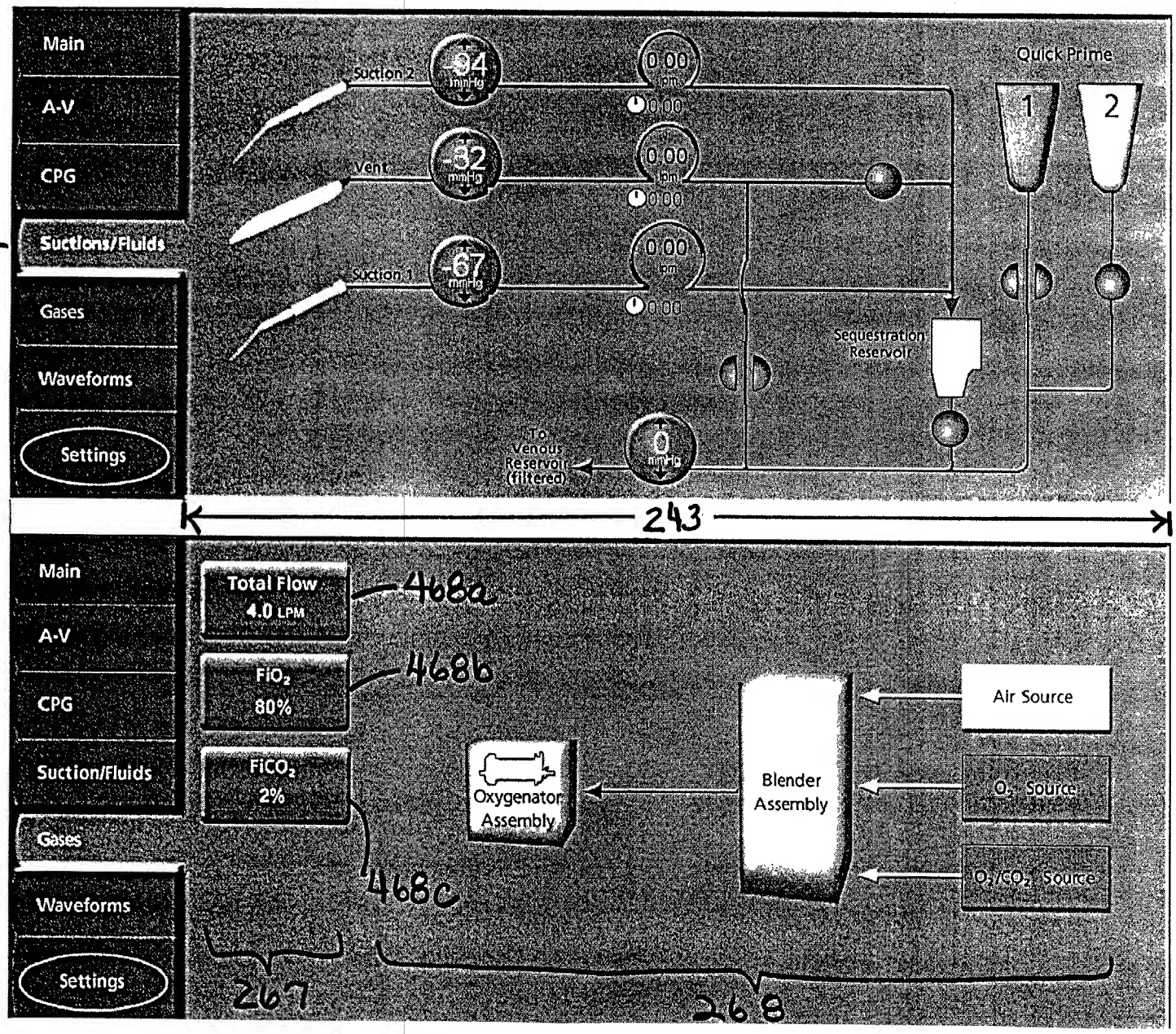


FIG. 32C

FIG. 32D

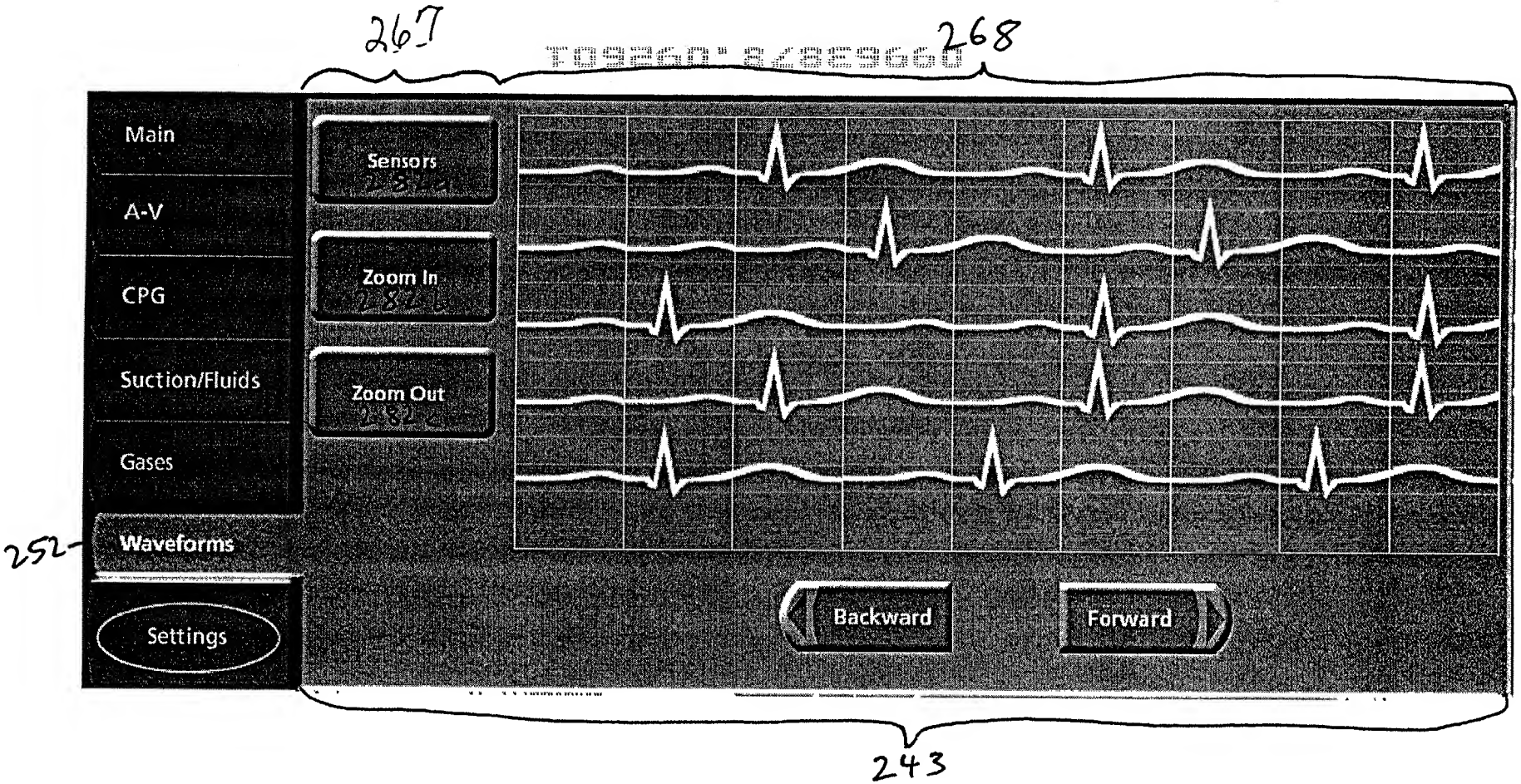

267
268
Main
A-V
CPG
Suction/Fluids
Gases
Waveforms
Settings
Sensors
Zoom In
Zoom Out
Backward
Forward
252
243

FIG. 32E

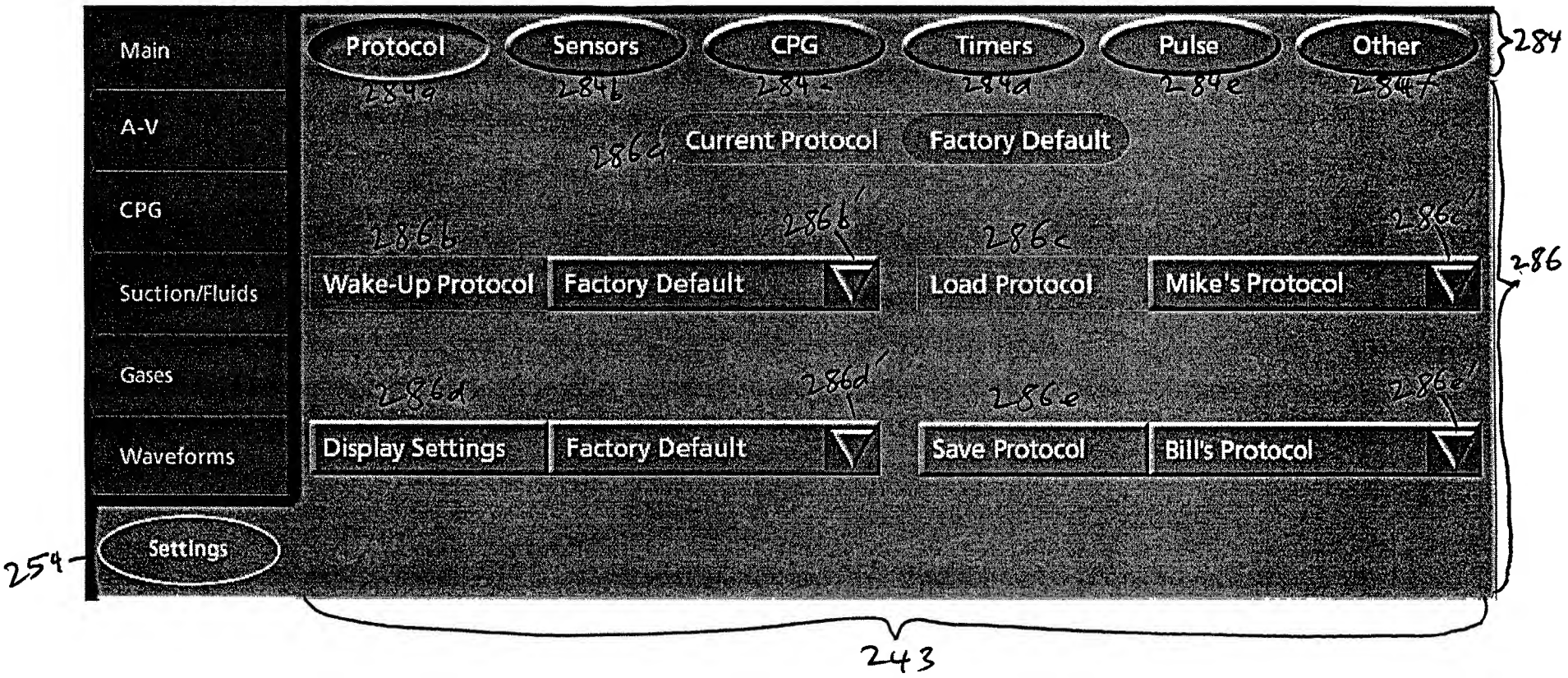

Main
A-V
CPG
Suction/Fluids
Gases
Waveforms
Settings
254
Protocol
Sensors
CPG
Timers
Pulse
Other
284
284a
284b
284c
284d
284e
284f
286d Current Protocol
Factory Default
286b
286b'
Wake-Up Protocol
Factory Default
286c
286c'
Load Protocol
Mike's Protocol
286
286a
286a'
Display Settings
Factory Default
286e
286e'
Save Protocol
Bill's Protocol
243

FIG. 33A

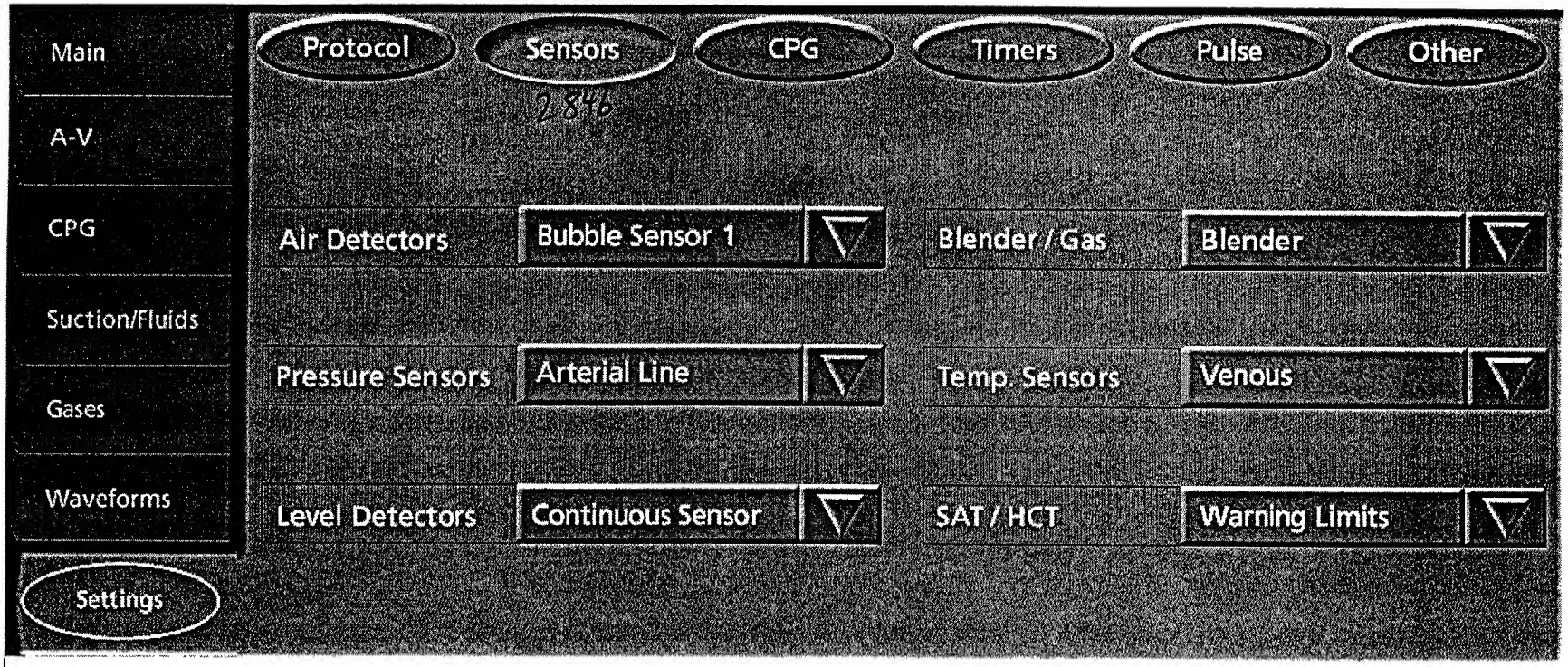


FIG. 33B

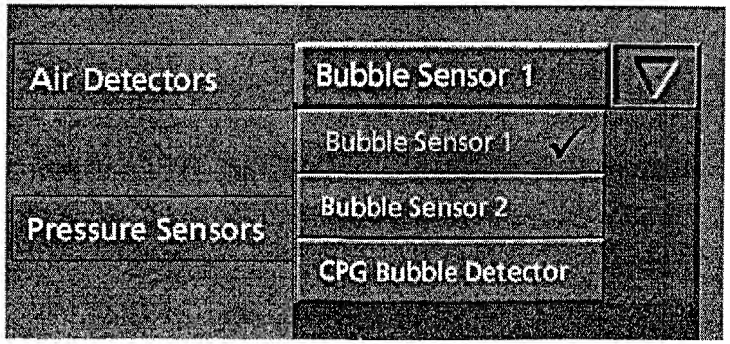


FIG. 33C

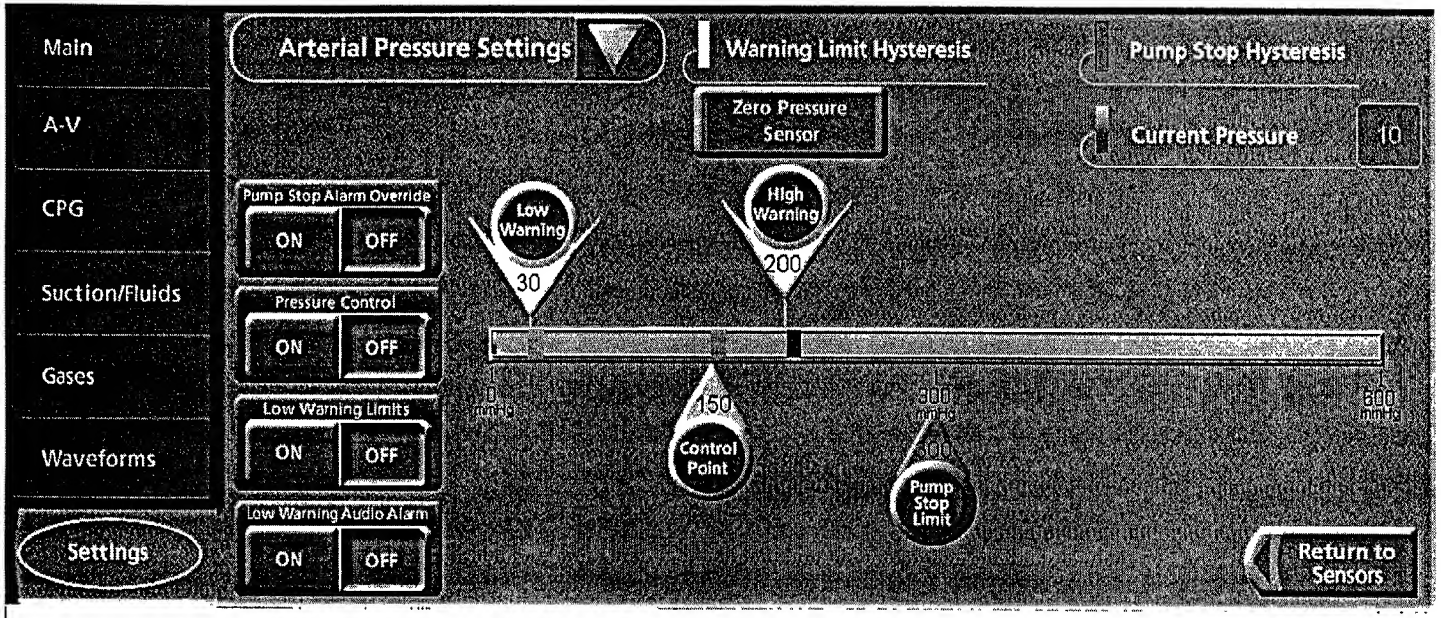


FIG. 33D

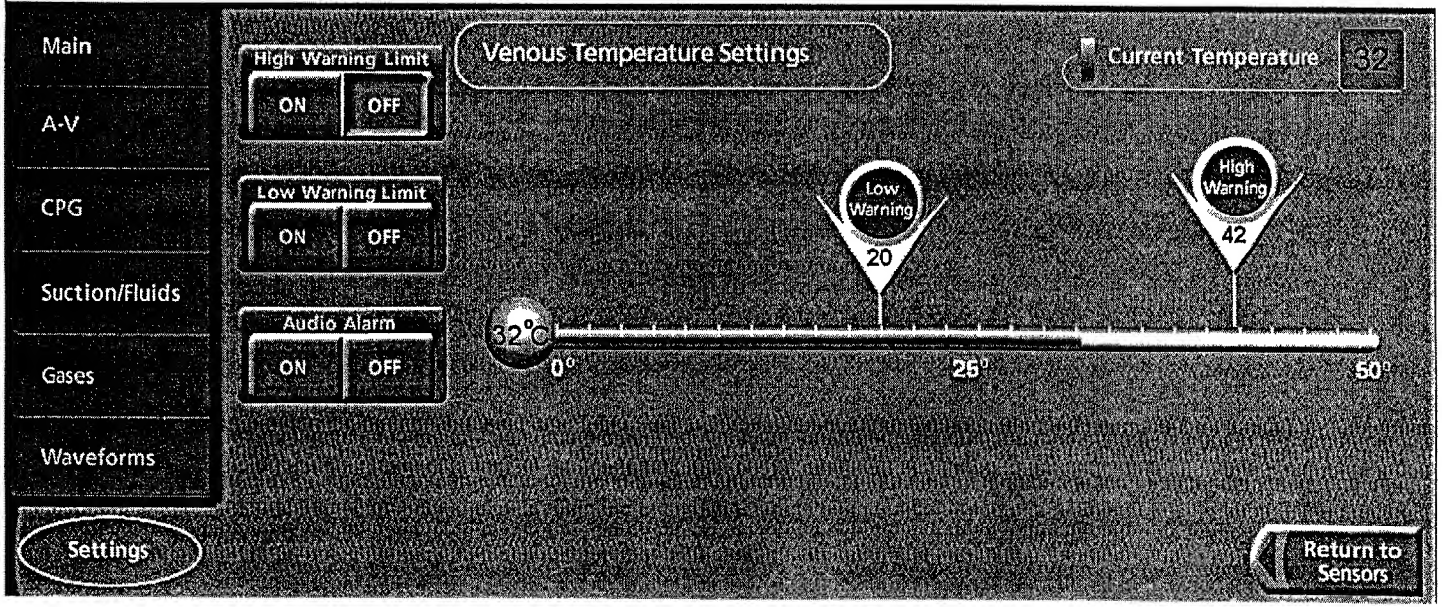


FIG. 33E

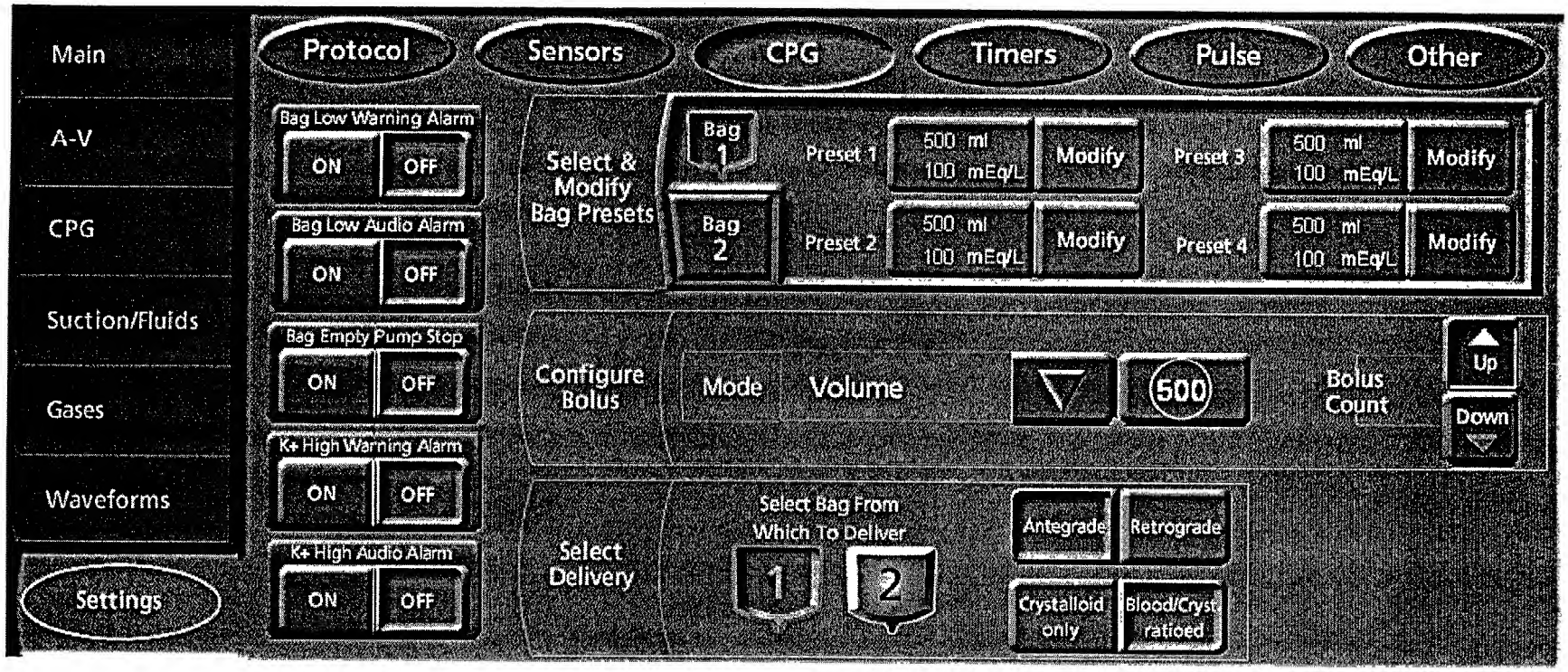

Main
A-V
CPG
Suction/Fluids
Gases
Waveforms
Settings
Protocol
Sensors
CPG
Timers
Pulse
Other
Bag Low Warning Alarm
ON
OFF
Bag Low Audio Alarm
ON
OFF
Bag Empty Pump Stop
ON
OFF
K+ High Warning Alarm
ON
OFF
K+ High Audio Alarm
ON
OFF
Select & Modify Bag Presets
Bag 1
Bag 2
Preset 1
500 ml 100 mEq/L
Modify
Preset 2
500 ml 100 mEq/L
Modify
Preset 3
500 ml 100 mEq/L
Modify
Preset 4
500 ml 100 mEq/L
Modify
Configure Bolus
Mode
Volume
500
Bolus Count
Up
Down
Select Delivery
Select Bag From Which To Deliver
1
2
Antegrade
Retrograde
Crystalloid only
Blood/Cryst ratioed

FIG. 33F